DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

Contracts Branch
Contracting Division

SUBJECT: Central Contractor Registration

TO ALL PROSPECTIVE CONTRACTORS:

Please be advised that it is now required to register with the CCR (Central Contractor Registration) in order to perform work for the Federal Government. For additional information, please refer to the instruction sheet on the back of this letter, which includes the appropriate websites and telephone numbers.

Sincerely,

Ella D. Snell
Contracting Officer

CENTRAL CONTRACTOR REGISTRATION

HTTP://WWW.ACQ.OSD.MIL/EC

1(800) 334-3414

The Central Contractor Registry (CCR) is the Government's new national storing house of commercial and financial information on current and would-be contractors.

CCR eliminates the requirement for current and future contractors to submit Standard Form 129 and provides a single location for registering to conduct business with the Federal Government. Access to the register is available via the World Wide Web. A registration workbook is available for downloading from this site. It is highly recommended you review it prior to processing CCR to ensure all required information is available. Contractors are required to have a DUNS (Data Universal Numbering System) assigned by Dunn & Bradstreet at no charge (call 1-800-333-0505).

The initial Web Site application capability is for the initial contractor registration only. The ability to change, update or cancel a registration and query contractor information via the Web is currently in effect. After submitting a registration, contractors may use the Web application to inquire as to the status of their registration. Typically, a registration will be activated within 48 hours after receiving a complete and accurate application via the Internet. To register via the Internet, go to *http://ccr.edi.disa.mil*. Registration of an applicant through fax or mail may take up to 30 days. The mailing addresses are as follows: For firms with Legal business names beginning with the letters A-K or a number use CCR Registration Assistance Center, 2000 South Loop 256, Suite 11, Palestine, Texas 75801, FAX NO: (903) 729-7988. For firms with Legal business names beginning with the letters L-Z or a number use CCR Registration Assistance Center, 1450 Scalp Avenue, Johnstown, PA. 15904 FAX NO: (814) 262-2326. For those Contractor's who chose to register by mail, a paper registration form can be used and sent or faxed to the appropriate above address who will also furnish the form. Once successfully registered in CCR, a notice will be sent via email, fax, or regular post with information that a Trading Partner Identification Number (TPIN) will soon follow. For CCR implementation and contract questions please contact Robert Cooper at (703) 681-7573.

Anyone may access CCR via the Web to inquire whether vendor is registered at the following site: *http://ccr.edi.disa.mil*.

Information or assistance is available from your local Electronic Commerce Resources Center or Electronic Commerce Information Center at 1-800-334-3414 (8am-8pm), Monday-Friday, except Federal Holidays.

Additionally, your local Procurement Technical Assistance Center (PTAC) employs highly skilled professionals to help businesses like ours earn Federal and State Government contracts; assist with your CCR enrollment. The PTAC can provide Government specifications, daily listings of bid opportunities, bid history and contract award results, training and assistance with Electronic Data Exchange (EDI).

To find the office nearest you, the national PTAC directory can be accessed at Website *http://www.fedmarket.com/tecassis.html*.

US Army Corps
of Engineers®
NEW YORK DISTRICT

Waterbury Dam Mitigation Project

Waterbury Dam Seepage Control Project, Waterbury Dam Waterbury, Vermont

Specifications

W912DS-05-B-0011
HUBZone Restricted

US ARMY ENGINEER DISTRICT, NEW YORK

INVITATION FOR BIDS NO. W912DS-05-B-0011

CHECK LIST FOR OFFER

ATTACHED IS IFB NO. W912DS-05-B-0011

WATERBURY DAM MITIGATION PROJECT
WATERBURY DAM SEEPAGE CONTROL PROJECT
WATERBURY, VERMONT

ALL INFORMATION REQUIRED BY THE TERMS OF THIS SOLICITATION MUST BE FURNISHED. MISTAKES OR OMISSIONS MAY RENDER YOUR OFFER INELIGIBLE FOR AWARD. IMPORTANT ITEMS FOR YOU TO CHECK ARE INCLUDED IN BUT NOT LIMITED TO THOSE LISTED BELOW. THIS INFORMATION IS FURNISHED ONLY TO ASSIST YOU IN SUBMITTING A PROPER BID

__HAVE YOU ACKNOWLEDGED ALL AMENDMENTS?

__HAVE YOU COMPLETED THE “REPRESENTATIONS AND CERTIFICATIONS” (SECTION 00600) PORTION OF THE SOLICITATION?

__IS YOUR DUNS NUMBER LISTED ON THE STANDARD FORM 1442?

__IS YOUR OFFER PROPERLY SIGNED?

__HAVE YOU ENSURED THAT YOU HAVE NOT RESTRICTED YOUR OFFER BY ALTERING THE PROVISIONS OF THE SOLICITATION?

__WHEN REQUIRED, HAVE YOU ENTERED A UNIT PRICE FOR EACH PRICE ITEM? (THE SOLICITATION SPECIFICALLY STATES WHEN THIS IS NECESSARY.)

__ARE DECIMALS IN YOUR PRICES IN THE PROPER PLACE? ARE YOUR FIGURES LEGIBLE?

__IF YOU HAVE MADE ERASURES OR CORRECTIONS ON YOUR OFFER, ARE THEY INITIALED BY THE PERSON SIGNING THE OFFER?

NEW YORK DISTRICT
CORPS OF ENGINEERS
NEW YORK, NEW YORK 10278-0090

REQUEST FOR PROPOSAL
FOR
Waterbury Dam Mitigation Project
Waterbury Dam Seepage Control Project
Waterbury, Vermont

1. Attached is REQUEST FOR PROPOSAL (RFP) NO. W912DS-05-B-0011

2. OFFER MUST BE SET FORTH full, accurate, and complete information as required by this Invitation for Bids, including attachments. The penalty for making false statements in bids is prescribed under Title 18, United States Code, Section 1001.

3. SUBMISSION OF OFFER: Complete details concerning proper submission of bids are contained in the INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFEROR (Section 00100).

4. Note the REQUIREMENT FOR AFFIRMATIVE ACTION of the EQUAL OPPORTUNITY clause as it applies to the contract resulting from this solicitation. (See paragraph NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY in Section 00100 of this IFB).

5. REPRESENTATIONS AND CERTIFICATIONS – SECTION 00600
Bidders and Offerors are required to complete the REPRESENTATIONS AND CERTIFICATIONS and submit them with their bids.

   Within Section 00600, note in particular the CERTIFICATION OF NON-SEGREGATED FACILITIES. Failure of a bidder or offeror to agree to the certification will render his bid or offer non-responsive to the terms of solicitations involving awards of contracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity Clause (1984 APR).

6. THIS PROJECT IS A CIVIL WORKS PROGRAM PROCUREMENT AND IS NOT FUNDED BY THE DEPARTMENT OF DEFENSE. BUY AMERICAN ACT – CONSTRUCTION MATERIALS (MAY 1993) IN ACCORDANCE WITH FAR 52.225-5 APPLIES.

MAIN TABLE OF CONTENTS

SOLICITATION, OFFER, AND AWARD *(Construction, Alteration, or Repair)*	1. SOLICITATION NO. W912DS-05-B-0011	2. TYPE OF SOLICITATION [X] SEALED BID (IFB) [ ] NEGOTIATED *(RFP)*	3. DATE ISSUED 04-Apr-2005	PAGE OF PAGES 1 OF 48

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO. W16ROE-5068-0627	6. PROJECT NO.

7. ISSUED BY CODE W912DS	8. ADDRESS OFFER TO *(If Other Than Item 7)* CODE
USA ENGINEER DISTRICT, NEW YORK ATTN:CENAN-CT ROOM 1843 26 FEDERAL PLAZA NEW YORK NY 10278 TEL:212-264-0238 FAX: 212-264-3013	**See Item 7** TEL: FAX:

9. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE NO. *(Include area code)* *(NO COLLECT CALLS)*
	ANNE SPIEGELBERG	917-790-8083

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

Waterbury Dam Mitigation Project, Waterbury, Vermont.

This acquisition is being solicited as a competitive HUBZONE SET-ASIDE REQUIREMENT. The applicable NAICS CODE is 237990 with a small business size standard of $28.5 million. The estimated cost range for this project is $250,000.00 to $500,000.00.

IMPORTANT: Bonds, Powers of Attorneys, Statements of Authenticity and Continuing Validity, and all related documents MUST NOT bear computer printed generated signatures and/or seals generated as part of a document, as opposed to being affixed to the document AFTER its generation, will not be accepted. Submission of such documents may render the bid or offer non-responsive and ineligible for award. Please review all bonds and accompanying documents required to be submitted.

11. The Contractor shall begin performance within 5 calendar days and complete it within 180 calendar days after receiving [ ] award, [X] notice to proceed. This performance period is [X] mandatory, [ ] negotiable. *(See* Sec 01010(a) *.)*

12 A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how many calendar days after award in Item 12B.)* [X] YES [ ] NO	12B. CALENDAR DAYS 10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 2 copies to perform the work required are due at the place specified in Item 8 by 11:00 AM *(hour)* local time 03 May 2005 *(date).* If this is a sealed bid solicitation, offers must be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee [X] is, [ ] is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

SOLICITATION, OFFER, AND AWARD (Continued)

(Construction, Alteration, or Repair)

OFFER ***(Must be fully completed by offeror)***

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)* **See Item 14**
CODE / FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirements stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)*

AMOUNTS	SEE SCHEDULE OF PRICES

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation -- give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD ***(To be completed by Government)***

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	**ITEM**	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C. 2304(c) ☐ 41 U.S.C. 253(c)
26. ADMINISTERED BY CODE		27. PAYMENT WILL BE MADE BY: CODE

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *(Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work, requisitions identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications or incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation, is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*	31A. NAME OF CONTRACTING OFFICER *(Type or print)* TEL: EMAIL:
30B. SIGNATURE / 30C. DATE	31B. UNITED STATES OF AMERICA BY / 31C. AWARD DATE

Section SF 30 - BLOCK 14 CONTINUATION PAGE

SCOPE OF WORK

The project consists of the stabilization of the shoreline and slope of the Waterbury Dam Reservoir. The Waterbury Dam Mitigation Project is the stabilization of the slope above the Waterbury Dam Reservoir utilizing bioengineering techniques along with the stone placement techniques. No water-based work will be needed for this project; all work can be completed from the shore. The project site can be accessed through the Little River State Park. The project location is Little River State Park, Waterbury Dam Reservoir, Waterbury, Washington County, Vermont.

Section 00010 - Solicitation Contract Form

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum		
	Mobilization & Demobilization and Site Access PURCHASE REQUEST NUMBER: W16ROE-5068-0627				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1,270	Cubic Yard		
	Armor Stone				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		500	Cubic Yard		
	Bedding Layer Stone				
				NET AMT	

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004	Placing of Bedding and Armor Stone	1	Lump Sum		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005	Geotextile	2,750	Square Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006	Site Clearing	1	Lump Sum		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007	Earthwork	1,140	Cubic Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008	Top Soil	190	Cubic Yard		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009	Soil Erosion and Sediment Control Features	1	Lump Sum		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010	INFORMATIONAL ITEM				

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010AA	Plants: Live Stakes	2,880	Each		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010AB	Plants: Branches	7,230	Each		

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	ESTIMATED QUANTITY	UNIT	UNIT PRICE	AMOUNT
0010AC	Plants: Trees/Tubelings	960	Each		

NET AMT

FOB: Destination

Section 00100 - Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY REFERENCE

52.214-3	Amendments To Invitations For Bids	DEC 1989
52.214-4	False Statements In Bids	APR 1984
52.214-5	Submission Of Bids	MAR 1997
52.214-6	Explanation To Prospective Bidders	APR 1984
52.214-7	Late Submissions, Modifications, and Withdrawals of Bids	NOV 1999
52.214-10	Contract Award--Sealed Bidding	JUL 1990
52.214-12	Preparation Of Bids	APR 1984
52.214-34	Submission Of Offers In The English Language	APR 1991
52.214-35	Submission Of Offers In U.S. Currency	APR 1991

52.222-23	Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction	FEB 1999
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991

CLAUSES INCORPORATED BY FULL TEXT

52.214-5000 APPARENT CLERICAL MISTAKES (MAR 1995)--EFARS
(a) For the purpose of initial evaluations of bids, the following will be utilized in the resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:
(1) Obviously misplaced decimal points will be corrected;
(2) Discrepancy between unit price and extended price, the unit price will govern;
(3) Apparent errors in extension of unit prices will be corrected;
(4) Apparent errors in addition of lump-sum and extended prices will be corrected.
(b) For the purpose of bid evaluation, the government will proceed on the assumption that the bidder intends his bid to be evaluated on basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.
(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.
(End of statement)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Fixed-Price Construction contract resulting from this solicitation.

(End of clause)

52.222-18 CERTIFICATION REGARDING KNOWLEDGE OF CHILD LABOR FOR LISTED END PRODUCTS (FEBRUARY 2001)

(a) Definition.

Forced or indentured child labor means all work or service--

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to a contract the enforcement of which can be accomplished by process or penalties.

(b) Listed end products. The following end product(s) being acquired under this solicitation is (are) included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, identified by their country

of origin. There is a reasonable basis to believe that listed endproducts from the listed countries of origin may have been mined, produced, or manufactured by forced or indentured child labor.

Listed End Product

Listed Countries of Origin

(c) Certification. The Government will not make award to an offeror unless the offeror, by checking the appropriate block, certifies to either paragraph (c)(1) or paragraph (c)(2) of this provision.

( ) (1) The offeror will not supply any end product listed in paragraph (b) of this provision that was mined, produced, or manufactured in a corresponding country as listed for that end product.

( ) (2) The offeror may supply an end product listed in paragraph (b) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture such end product. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Chief, Contracting Division, 26 Federal Plaza, N.Y., N.Y. 10278-0090.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

http://farsite.hill.af.mil/

(End of provision

252.211-7002 AVAILABILITY FOR EXAMINATION OF SPECIFICATIONS, STANDARDS, PLANS, DRAWINGS, DATA ITEM DESCRIPTIONS, AND OTHER PERTINENT DOCUMENTS (DEC. 1991)

The specifications, standards, plans, drawings, data item descriptions, and other pertinent documents cited in this solicitation are not available for distribution but may be examined at the following location:

(Insert complete address)

(End of Clause)

Section 00600 - Representations & Certifications

CLAUSES INCORPORATED BY REFERENCE

52.219-2	Equal Low Bids	OCT 1995
52.225-2	Buy American Act Certificate	JUN 2003
52.225-4	Buy American Act--North American Free Trade Agreement--Israeli Trade Act Certificate	JAN 2005
52.225-4 Alt I	Buy American Act--North American Free Trade Agreement--Israeli Trade Act Certificate (Jan 2005) Alternate I	JAN 2004
52.225-6	Trade Agreements Certificate	JAN 2005
252.209-7001	Disclosure of Ownership or Control by the Government of a Terrorist Country	SEP 2004
252.225-7003	Report of Intended Performance Outside the United States	APR 2003

CLAUSES INCORPORATED BY FULL TEXT

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than $10,000, and not more than $100,000, for each such failure.

(End of provision)

52.204-3 TAXPAYER IDENTIFICATION (OCT 1998)

(a) Definitions.

Common parent, as used in this provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Taxpayer Identification Number (TIN), as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

(b) All offerors must submit the information required in paragraphs (d) through (f) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements described in Federal Acquisition Regulation (FAR) 4.904, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN).

___ TIN:.----------

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of the Federal Government.

(e) Type of organization.

___ Sole proprietorship;

___ Partnership;

___ Corporate entity (not tax-exempt);

___ Corporate entity (tax-exempt);

___ Government entity (Federal, State, or local);

___ Foreign government;

___ International organization per 26 CFR 1.6049-4;

___ Other----------

(f) Common parent.

___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this provision.

___ Name and TIN of common parent:

Name----------

TIN----------

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it ( ) is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (DEC 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that-

(i) The Offeror and/or any of its Principals -

(A) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have ( ) have not ( ), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror has ( ) has not ( ), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.214-14 PLACE OF PERFORMANCE--SEALED BIDDING (APR 1985)

(a) The bidder, in the performance of any contract resulting from this solicitation, [ ] intends, [ ] does not intend [check applicable box] to use one or more plants or facilities located at a different address from the address of the bidder as indicated in this bid.

(b) If the bidder checks "intends" in paragraph (a) above, it shall insert in the spaces provided below the required information:

Place of Performance (Street, Address, City, County, State, Zip Code)	Name and Address of Owner and Operator of the Plant or Facility if Other than Bidder
_____	_____
_____	_____
_____	_____
_____	_____

(End of provision)

52.214-16 MINIMUM BID ACCEPTANCE PERIOD (APR 1984)

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the Government for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The Government requires a minimum acceptance period of 60 calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the Government's minimum requirement.

The bidder allows the following acceptance period: __60_____ calendar days.

(e) A bid allowing less than the Government's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

(End of clause)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2004) - ALTERNATE I (APR 2002)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 237990.

(2) The small business size standard is 28.5 million.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it ( ) is, ( ) is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it ( ) is, ( ) is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it ( ) is, ( ) is not a service-disabled veteran-owned small business concern.

(6) [Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It ( ) is, ( ) is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It ( ) is, ( ) is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture:_____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

____ Black American.

____ Hispanic American.

____ Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

____ Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

____ Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

____ Individual/concern, other than one of the preceding.

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) That is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; or

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-22 SMALL DISADVANTAGED BUSINESS STATUS (OCT 1999)

(a) General. This provision is used to assess an offeror's small disadvantaged business status for the purpose of obtaining a benefit on this solicitation. Status as a small business and status as a small disadvantaged business for general statistical purposes is covered by the provision at FAR 52.219-1, Small Business Program Representation.

(b) Representations.

(1) General. The offeror represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

___ (i) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and

(A) No material change in disadvantaged ownership and control has occurred since its certification;

(B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed $750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(C) It is identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration(PRO0Net); or

___ (ii) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

(2)___ For Joint Ventures. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements at 13 CFR 124.1002(f) and that the representation in paragraph (b)(1) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: _____.]

(c) Penalties and Remedies. Anyone who misrepresents any aspects of the disadvantaged status of a concern for the purposes of securing a contract or subcontract shall:

(1) Be punished by imposition of a fine, imprisonment, or both;

(2) Be subject to administrative remedies, including suspension and debarment; and

(3) Be ineligible for participation in programs conducted under the authority of the Small Business Act.

(End of provision)

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ( ) It has, ( ) has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ( ) It has, ( ) has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.222-25 AFFIRMATIVE ACTION COMPLIANCE (APR 1984)

The offeror represents that

(a) [ ] it has developed and has on file, [ ] has not developed and does not have on file, at each establishment,

affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or

(b) [ ] has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(End of provision)

52.222-38 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (DEC 2001)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 38 U.S.C. 4212(d) (i.e., if it has any contract containing Federal Acquisition Regulation clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans), it has submitted the most recent VETS-100 Report required by that clause.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (AUG 2003)

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

( ) (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

( ) (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

( ) (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

( ) (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094.

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), 5169, 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

( ) (v) The facility is not located within the United States or its outlying areas.

(End of clause)

52.226-2 HISTORICALLY BLACK COLLEGE OR UNIVERSITY AND MINORITY INSTITUTION REPRESENTATION (MAY 2001)

(a) Definitions. As used in this provision--

Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense, the National Aeronautics and Space Administration, and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

(b) Representation. The offeror represents that it--

( ) is ( ) is not a historically black college or university;

( ) is ( ) is not a minority institution.

(End of provision)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (APR 2003)

(a) Definitions. As used in this provision--

(1) Foreign person means any person (including any individual, partnership, corporation, or other form of association) other than a United States person.

(2) United States person is defined in 50 U.S.C. App. 2415(2) and means--

(i) Any United States resident or national (other than an individual resident outside the United States who is employed by other than a United States person);

(ii) Any domestic concern (including any permanent domestic establishment of any foreign concern); and

(iii) Any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern that is controlled in fact by such domestic concern.

(b) Certification. If the offeror is a foreign person, the offeror certifies, by submission of an offer, that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. 2407(a) prohibits a United States person from taking.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

Section 00700 - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
52.203-3	Gratuities	APR 1984
52.203-5	Covenant Against Contingent Fees	APR 1984
52.203-6	Restrictions On Subcontractor Sales To The Government	JUL 1995
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity	JAN 1997
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal Transactions	JUN 2003
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.204-7	Central Contractor Registration	OCT 2003
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment	JAN 2005
52.211-18	Variation in Estimated Quantity	APR 1984
52.214-26	Audit and Records--Sealed Bidding	OCT 1997
52.214-27	Price Reduction for Defective Cost or Pricing Data - Modifications - Sealed Bidding	OCT 1997
52.214-28	Subcontracting Cost Or Pricing Data--Modifications--Sealed Bidding	OCT 1997
52.214-29	Order Of Precedence--Sealed Bidding	JAN 1986
52.219-8	Utilization of Small Business Concerns	MAY 2004
52.219-16	Liquidated Damages-Subcontracting Plan	JAN 1999
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-3	Convict Labor	JUN 2003
52.222-6	Davis Bacon Act	FEB 1995
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	APR 2002
52.222-35	Equal Opportunity For Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans	DEC 2001
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, and Other Eligible Veterans	DEC 2001
52.222-39	Notification of Employee Rights Concerning Payment of Union Dues or Fees	DEC 2004
52.223-14	Toxic Chemical Release Reporting	AUG 2003
52.225-10	Notice of Buy American Act Requirement--Construction Materials	MAY 2002
52.226-1	Utilization Of Indian Organizations And Indian-Owned Economic Enterprises	JUN 2000
52.227-1	Authorization and Consent	JUL 1995
52.227-2	Notice And Assistance Regarding Patent And Copyright Infringement	AUG 1996
52.228-15	Performance and Payment Bonds--Construction	JUL 2000
52.229-3	Federal, State And Local Taxes	APR 2003
52.232-5	Payments under Fixed-Price Construction Contracts	SEP 2002
52.232-9	Limitation On Withholding Of Payments	APR 1984

52.232-23	Assignment Of Claims	JAN 1986
52.232-25	Prompt Payment	OCT 2003
52.233-1	Disputes	JUL 2002
52.233-3	Protest After Award	AUG 1996
52.236-3	Site Investigation and Conditions Affecting the Work	APR 1984
52.236-6	Superintendence by the Contractor	APR 1984
52.236-7	Permits and Responsibilities	NOV 1991
52.236-13	Accident Prevention	NOV 1991
52.242-13	Bankruptcy	JUL 1995
52.242-14	Suspension of Work	APR 1984
52.243-5	Changes and Changed Conditions	APR 1984
52.244-6	Subcontracts for Commercial Items	DEC 2004
52.246-1	Contractor Inspection Requirements	APR 1984
52.246-12	Inspection of Construction	AUG 1996
52.247-34	F.O.B. Destination	NOV 1991
52.249-2	Termination For Convenience Of The Government (Fixed-Price)	MAY 2004
52.249-10	Default (Fixed-Price Construction)	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other Defense-Contract-Related Felonies	DEC 2004
252.204-7003	Control Of Government Personnel Work Product	APR 1992
252.204-7004 Alt A	Central Contractor Registration (52.204-7) Alternate A	NOV 2003
252.205-7000	Provision Of Information To Cooperative Agreement Holders	DEC 1991
252.209-7004	Subcontracting With Firms That Are Owned or Controlled By The Government of a Terrorist Country	MAR 1998
252.215-7000	Pricing Adjustments	DEC 1991
252.219-7011	Notification to Delay Performance	JUN 1998
252.223-7004	Drug Free Work Force	SEP 1988
252.225-7004	Reporting of Contract Performance Outside the United States	APR 2003
252.225-7012	Preference For Certain Domestic Commodities	JUN 2004
252.226-7001	Utilization of Indian Organizations and Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns	SEP 2004
252.227-7023	Drawings and Other Data to become Property of Government	MAR 1979
252.232-7003	Electronic Submission of Payment Requests	JAN 2004
252.232-7003	Electronic Submission of Payment Requests	JAN 2004
252.236-7000	Modification Proposals-Price Breakdown	DEC 1991
252.236-7008	Contract Prices-Bidding Schedules	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7001	Pricing Of Contract Modifications	DEC 1991
252.243-7002	Requests for Equitable Adjustment	MAR 1998
252.244-7000	Subcontracts for Commercial Items and Commercial Components (DoD Contracts)	MAR 2000
252.246-7000	Material Inspection And Receiving Report	MAR 2003
252.247-7023	Transportation of Supplies by Sea	MAY 2002
252.247-7023 Alt I	Transportation of Supplies by Sea(May 2002) Alternate I	MAR 2000
252.247-7023 Alt II	Transportation of Supplies by Sea(May 2002) Alternate II	MAR 2000
252.247-7024	Notification Of Transportation Of Supplies By Sea	MAR 2000

CLAUSES INCORPORATED BY FULL TEXT

52.204-1 APPROVAL OF CONTRACT (DEC 1989)

This contract is subject to the written approval of the Contracting Officer and shall not be binding until so approved.

(End of clause)

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 180 calendar day after issuance of Notice to Proceed.* The time stated for completion shall include final cleanup of the premises.

*The Contracting Officer shall specify either a number of days after the date the contractor receives the notice to proceed, or a calendar date.

(End of clause)

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $426.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of clause)

52.219-3 NOTICE OF TOTAL HUBZONE SET-ASIDE (JAN 1999)

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) General. (1) Offers are solicited only from HUBZone small business concerns. Offers received from concerns that are not HUBZone small business concerns shall not be considered.

(2) Any award resulting from this solicitation will be made to a HUBZone small business concern.

(c) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for--

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than acquisition from a nonmanufacturer of the supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(d) A HUBZone joint venture agrees that, in the performance of the contract, the applicable percentage specified in paragraph (c) of this clause will be performed by the HUBZone small business participant or participants.

(e) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for minority participation for each trade	Goals for female participation for each trade
0.8%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the

contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is Addison, Caledonia, Essex, Lamoille, Orange, Orleans, and Washington Counties.

(End of provision)

52.222-26 EQUAL OPPORTUNITY (APR 2002) ALTERNATE I (FEB 1999)

Notice. The following terms of this clause are waived for this contract: Contracting Officer shall list terms .

(a) Definition. United States, as used in this clause, means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of $10,000, the Contractor shall comply with paragraphs (b)(1) through (b)(11) of this clause, except for work performed outside the United States by employees who were not recruited within the United States. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor,

state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

(End of clause)

52.222-35 EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA AND OTHER ELIGIBLE VETERANS (DEC 2001) ALTERNATE I (DEC 2001)

Notice: The following term(s) of this clause are waived for this contract: [List term(s)].

(a) Definitions. As used in this clause--

All employment openings means all positions except executive and top management, those positions that will be filled from within the Contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days duration, and part-time employment.

Executive and top management means any employee--

(1) Whose primary duty consists of the management of the enterprise in which the individual is employed or of a customarily recognized department or subdivision thereof;

(2) Who customarily and regularly directs the work of two or more other employees;

(3) Who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight;

(4) Who customarily and regularly exercises discretionary powers; and

(5) Who does not devote more than 20 percent or, in the case of an employee of a retail or service establishment, who does not devote more than 40 percent of total hours of work in the work week to activities that are not directly and closely related to the performance of the work described in paragraphs (1) through (4) of this definition. This paragraph (5) does not apply in the case of an employee who is in sole charge of an establishment or a physically separated branch establishment, or who owns at least a 20 percent interest in the enterprise in which the individual is employed.

Other eligible veteran means any other veteran who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

Positions that will be filled from within the Contractor's organization means employment openings for which the Contractor will give no consideration to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings the Contractor proposes to fill from regularly established “recall” lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Qualified special disabled veteran means a special disabled veteran who satisfies the requisite skill, experience, education, and other job-related requirements of the employment position such veteran holds or desires, and who, with or without reasonable accommodation, can perform the essential functions of such position.

Special disabled veteran means--

(1) A veteran who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Department of Veterans Affairs for a disability--

(i) Rated at 30 percent or more; or

(ii) Rated at 10 or 20 percent in the case of a veteran who has been determined under 38 U.S.C. 3106 to have a serious employment handicap (i.e., a significant impairment of the veteran's ability to prepare for, obtain, or retain employment consistent with the veteran's abilities, aptitudes, and interests); or

(2) A person who was discharged or released from active duty because of a service-connected disability.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days and was discharged or released from active duty with other than a dishonorable discharge, if any part of such active duty occurred--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases; or

(2) Was discharged or released from active duty for a service-connected disability if any part of the active duty was performed--

(i) In the Republic of Vietnam between February 28, 1961, and May 7, 1975; or

(ii) Between August 5, 1964, and May 7, 1975, in all other cases.
(b) General. (1) The Contractor shall not discriminate against the individual because the individual is a special disabled veteran, a veteran of the Vietnam era, or other eligible veteran, regarding any position for which the employee or applicant for employment is qualified. The Contractor shall take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans without discrimination based upon their disability or veterans' status in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;

(iii) Rate of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C. 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor shall comply with the rules, regulations, and relevant orders of the Secretary of Labor issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended (38 U.S.C. 4211 and 4212).

(c) Listing openings. (1) The Contractor shall immediately list all employment openings that exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract, and including those occurring at an establishment of the Contractor other than the one where the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local public employment service office of the State wherein the opening occurs. Listing employment

openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.

(2) The Contractor shall make the listing of employment openings with the local employment service office at least concurrently with using any other recruitment source or effort and shall involve the normal obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing of employment openings does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(3) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State public employment agency in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State agency, it need not advise the State agency of subsequent contracts. The Contractor may advise the State agency when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, the Virgin Islands of the United States, and Wake Island.

(e) Postings. (1) The Contractor shall post employment notices in conspicuous places that are available to employees and applicants for employment.

(2) The employment notices shall--

(i) State the rights of applicants and employees as well as the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans, veterans of the Vietnam era, and other eligible veterans; and

(ii) Be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary of Labor), and provided by or through the Contracting Officer.

(3) The Contractor shall ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled veteran, or may lower the posted notice so that it can be read by a person in a wheelchair).

(4) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement, or other contract understanding, that the Contractor is bound by the terms of the Act and is committed to take affirmative action to employ, and advance in employment, qualified special disabled veterans, veterans of the Vietnam era, and other eligible veterans.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, the Government may take appropriate actions under the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(g) Subcontracts. The Contractor shall insert the terms of this clause in all subcontracts or purchase orders of $25,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor. The Contractor shall act as specified by the Deputy Assistant Secretary of Labor to enforce the terms, including action for noncompliance.

(End of clause)

52.225-9 BUY AMERICAN ACT—CONSTRUCTION MATERIALS (JAN 2005)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows: None

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) \1\

Item 1
Foreign construction material.... ....
Domestic construction material... ....
Item 2
Foreign construction material.... ....
Domestic construction material... ....

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).
List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.
Include other applicable supporting information.

(End of clause)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance agreements), as required by the bid as accepted.-

(c) The amount of the bid guarantee shall be 20% percent of the bid price or $3,000,000.00, whichever is less.-

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.-

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

(End of clause)

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (OCT 2003)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government

officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of $1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a “second-tier subcontractor”) a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts DisputesAct of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (OCT 2003)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term “EFT” refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(f) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(g) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register separately in the CCR database and shall be paid by EFT in accordance with the terms of this clause. Notwithstanding any other requirement of this contract, payment to an ultimate recipient other than the

Contractor, or a financial institution properly recognized under an assignment of claims pursuant to subpart 32.8, is not permitted. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(h) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(i) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method mo st convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-4 APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM (OCT 2004)

United States law will apply to resolve any claim of breach of this contract.

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

http://farsite.hill.af.mil/

(End of clause)

252.236-7001 CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall--

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general--

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the misdescription of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title File Drawing No.
INCLUDED IN SPECIFICATION
(End of clause)

252.236-7004 PAYMENT FOR MOBILIZATION AND DEMOBILIZATION (DEC 1991)

(a) The Government will pay all costs for the mobilization and demobilization of all of the Contractor's plant and equipment at the contract lump sum price for this item.

(1) 60 percent of the lump sum price upon completion of the contractor's mobilization at the work site.

(2) The remaining 40 percent upon completion of demobilization.

(b) The Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid if the Contracting Officer believes that the percentages in paragraphs (a) (1) and (2) of this clause do not bear a reasonable relation to the cost of the work in this contract.

(1) Failure to justify such price to the satisfaction of the Contracting Officer will result in payment, as determined by the Contracting Officer, of --

(i) Actual mobilization costs at completion of mobilization;

(ii) Actual demobilization costs at completion of demobilization; and

(iii) The remainder of this item in the final payment under this contract.

(2) The Contracting Officer's determination of the actual costs in paragraph (b)(1) of this clause is not subject to appeal.

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAY 2002) ALTERNATE III (MAY 2002)

(a) Definitions. As used in this clause --

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Maritime Administration, Office of Cargo Preference, U.S. Department of Transportation, 400 Seventh Street SW., Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information:

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall insert the substance of this clause, including this paragraph (f), in subcontracts that are for a type of supplies described in paragraph (b)(2) of this clause.

(End of clause)

SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

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40. Labor Surplus Area Expenditure Requirements
41. Permits
42. Bioengineering Specialists

SPECIAL CONTRACT REQUIREMENTS

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK

a. The Contractor shall be required to (i) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use not later than 180 days after the date the Contractor receives the notice to proceed. The time stated for completion shall include final cleanup of the premises.

b. Location: The site of work is at the Waterbury Dam, Waterbury, Vermont.

c. The Contractor shall furnish all labor, materials, equipment and services (except those furnished by the Government) for the following work: Stabilization of eroding slope at Waterbury Dam Reservoir.

d. All work shall be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject in every detail to his supervision, direction, and instructions

e. Magnitude of Construction Project: The estimated value of the work is between $250,000 and $500,000.

2. LIQUIDATED DAMAGES – CONSTRUCTION (APR 1984)

a. If the Contractor fails to complete the work within the time specified in the Contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of $426.00 for each day of delay.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted. (FAR 52.212-5)

d. At a time before the project is physically complete but is functionally complete to the satisfaction of the Government, the Government at its sole discretion may agree to accept transfer of the facility or project provided that the remaining work to be done ("punchlist") is completed no later than 30 days from the date of transfer. In this case the

Contractor shall pay liquidated damages for punchlist items not completed in the daily amount of $100 per day commencing after 30 days of project transfer or after date required for project completion (including all extensions), whichever occurs later.

3. EQUAL OPPORTUNITY PREAWARD CLEARANCE OF SUBCONTRACTS (1984 APR)

Notwithstanding the clause of this contract entitled "Subcontracts" the Contractor shall not enter into a first-tier subcontract for an estimated or actual amount of $1 million or more without obtaining in writing from the Contracting Officer a clearance that the proposed subcontractor is in compliance with the equal opportunity requirements and therefore is eligible for award.

4. CERTIFICATES OF COMPLIANCE

Any Certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 4 copies. Each certificate shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements. (ECI 7- 670.3)

5. BID GUARANTEE

See Bid Guarantee Clause of Section 00700, CONTRACT CLAUSES.

6. CONTRACT DRAWINGS, MAPS, AND SPECIFICATIONS (52.236-7001)

See Contract Drawings, Maps and Specifications Clause of Section 00700, CONTRACT CLAUSES. For list of drawings see Index of Drawings.

7. RECORD DRAWINGS

a. General: The Contractor will maintain as-built drawings during the construction period and will submit final record drawings at the completion of individual facilities. The Government will provide to the Contractor the CAD (Computer-Aided Drafting) files consisting of compact (computer) disks or magnetic media of the drawing files in the

appropriate CAD format (i.e. "Microstation", "Autocad", etc.) for the project. The Contractor is required to make prints or mylars from the CAD files and continuously maintain drawings to show current as-built conditions for the duration of the construction. Except for updates as indicated below, the Contractor may maintain as-built drawings by marking up drawings by hand or by CAD methods. Scanned drawings will not be acceptable. If the Government cannot provide CAD files for the project drawings, mylar (reproducible) drawings will be provided. The contractor will then be required to comply with all requirements indicated herein by the use of hand drafting

b. Progress As-built Prints: During construction the Contractor is responsible for maintaining up to date one set of paper prints to show as-built construction conditions. These prints shall be kept current and available on the job site at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accordingly and neatly recorded as they occur by means of details and notes. The as-built prints will be jointly inspected for accuracy and completeness by the Contracting Officer's Representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate. Progress as-builts shall show the following information, but not limited thereto:

(1) The location and description of any utility lines, valves, or other installations of any kind within the construction area. The location includes dimensions to permanent features.

(2) The location and dimensions of any changes with the building and structure.

(3) Correct grade or alignment of roads, structures or utilities if any changes were made from the contract plans.

(4) Correct elevations if changes were made in site grading

(5) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabricated, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

(6) The topography and grades of all drainage installed or affected as part of the project construction.

(7) All changes, which result from contract modifications.

(8) Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built prints.

(9) All amendments to the contract drawings issued during the solicitation period shall be posted on the as-built drawings.

c. Hand Drafting: If mylars only are provided to the Contractor, they shall be updated using hand drafting. Only personnel proficient in the preparation of engineering drawings to standards satisfactory and acceptable to the Government shall be employed to modify the mylar reproduction drawings or prepare additional new drawings. All additions and corrections to the contract drawings shall be neat, clean and legible, and shall match the adjacent line work and/or lettering being annotated in type, density, size and style. All drafting work shall be done using the same medium (pencil, plastic lead or ink) that was employed on the original contract drawings and with graphic lead on paper base material. The title block to be used for any new as-built drawings shall be similar to that used on the original contract drawings

d. Protection of Records: The Contractor shall be responsible for the protection and safety of mylars and CAD record until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense.

e. 50% As-Built Update: Not required.

f. Preliminary Record Drawing Submittal: At least thirty calendar (30) days before the anticipated date of final acceptance inspection the Contractor shall deliver two copies of progress prints showing final as-built conditions to the Contracting Officer for review and approval. These prints shall correctly show all the features of the project as it has been constructed, adding such additional drawings as may be necessary. They shall be printed from the CAD files updated in the appropriate CAD program, or from updated mylars if mylars only were provided to the Contractor. Within ten days, the Government will provide the Contractor one set of prints indicating required corrections to the preliminary submittal. Contractor will correct and resubmit within 5 days. Any required subsequent review and resubmission periods will each be accomplished within 5 days. Upon Government approval of the preliminary submittal, the Contractor will prepare final record drawings.

g. Record Drawing Submission: In the appropriate CAD program each drawing shall be marked with the words "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in font which will print at least 3/16" high. All revisions to the original contract drawings will be dated in the revision block. All prints and mylars must be reproduced from the updated CAD files. If mylars only were provided to the Contractor, they shall be hand-lettered or stamped as indicated above, and revisions shown in revision block. A minimum of 5 calendar days before the anticipated date of final acceptance inspection of the project the Contractor shall deliver to the Contracting Officer:

Three (3) CD's (ROM) of CAD files of Record Drawings.
One (1) set of Mylar Record Drawings
One (1) copy of prints of Record Drawings

Failure to make an acceptable submission of Record Drawings will delay the Final Acceptance Inspection for the project and shall be cause for withholding any payment due the Contractor under this contract.

h. Property: All paper prints, reproducible drawings and CAD files will become property of the Government upon final approval. Approval and acceptance of the final record drawings shall be accomplished before final payment is made to the Contractor

i. Payment: No separate payment will be made for the as-built and record drawings or updating of CAD files required under this contract, and all costs in connection therewith shall be considered a subsidiary obligation of the Contractor.

8. DESIGNATION OF PROPERTY ADMINISTRATOR

Not Used.

9. PHYSICAL DATA

Information and data furnished or referred to below is furnished for the Contractor's information. However, it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor.

a. Weather Conditions: Climatological data determined from records of the U.S. Weather Bureau Station, Waterbury, VT.

Mean Annual Temperature: 42.8 degrees F
Mean Annual Precipitation: 43.23 inches

See also paragraph entitled TIME EXTENSIONS FOR UNUSUALLY SEVER WEATHER.

a. Transportation Facilities:

Highways and Roads: Interstate Route 89 and US Route 2 serve the locality of the proposed work. The Contractor shall make his own investigation of available roads for transportation, of load limits of bridges and roads, and other road conditions affecting the transportation of materials, supplies, equipment and other facilities to site. Roads within the work area proposed to be used by the Contractor, shall be subject to prior approval of the Contracting Officer and such roads, if used, shall be maintained throughout construction and shall be restored to as good condition as existed prior to their use. The Contractor shall also construct such temporary haul roads and bridges as may be necessary for the conduct of his work. Any such temporary construction shall be restored to its original condition. All costs for the use of existing transportation facilities, for the

construction of temporary facilities, and for maintenance, repair, removal and restoration shall be borne by the Contractor.

10. PAYMENT FOR MATERIALS DELIVERED OFF-SITE

Pursuant to the Contract Clauses in this contract titled "Payments Under Fixed-Price Construction Contracts", materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to those materials which have been approved, if required by the technical provisions; those materials which have been fabricated to the point where they are identifiable to an item of work required under this contract. Such payment will be made only after receipt of paid or receipted invoices or invoices with cancelled check showing title to the items in the prime contractor and including the value of materials and labor incorporated into the item.

11. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

a. Allowable cost for construction and equipment in sound workable condition owned or controlled and furnished by a Contractor or subcontractor at any tier shall be based on actual cost data when the government can determine both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series from the Contractor's accounting records. When both ownership and operating costs cannot be determined from the Contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110-1-8*, "Construction Equipment Ownership and Operating Expense Schedule," Region 1. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified Otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces or equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retrospective pricing, the schedule in effect at the time the work was performed shall apply.

(* This manual can be ordered from the Government Printing Office by calling Tel. No. (202) 783-3238. There is a charge for the manual.)

b. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36 substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease-purchase or sale-leaseback arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated leases are allowable. Costs for major repair and overhaul are unallowable.

c. When actual equipment costs are proposed and the total amount of the pricing action is over $25,000, cost or pricing data shall be submitted on Standard Form 1411, "Contract Pricing Proposal Cover Sheet." By submitting cost or pricing data, the Contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate, complete and current.

12. ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows:

Add the following sentence to paragraph "g" of basic contract clause, SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (1984 APR):

"Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted." Alt.1 (APR 1984)(FAR 52.236-21)

13. AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

The responsibility shall be upon the Contractor to provide and maintain at his own expense adequate supply of electricity, water, and sanitary facilities for his use for construction purposes and the use of his construction forces and to install and maintain necessary supply connections for same, but only at such locations and in such manner as may be approved by the Contracting Officer's representative. All installations shall comply with all applicable codes, standards and requirements. Before final acceptance, temporary connections installed by the Contractor shall be removed in a manner satisfactory to the Contractor Officer.

14. LAYOUT OF WORK

a. The Contractor will establish at his own expense the base lines and bench marks at the site of the work: (Monuments and bench marks as shown in the specifications).

b. From the base lines and bench marks established, the Contractor shall complete the layout of the work and shall be responsible for all measurements that may be required for the execution of the work to the location and limit marks prescribed in the specifications or on the contract drawings, subject to such modifications as the Contracting Officer may require to meet changed conditions or as a result of necessary modifications to the contract work.

c. The contractor shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in laying out any part of the work from the base lines and bench marks. It shall be the responsibility of the Contractor to maintain and preserve all stakes and other marks established until authorized to remove them, and if such marks are destroyed by the Contractor, or through his negligence prior to their authorized removal, they shall be replaced by the Contractor, at his own expense, if directed by the Contracting Officer. The Contracting Officer may require that work be suspended at any time when location and limit marks established by the Contractor are not reasonably adequate to permit checking of the work.

15. FIELD OFFICE

Not Required.

16. BULLETIN BOARD

Immediately upon beginning of work under this contract, the Contractor shall provide at the job site a weatherproof glass-covered bulletin board for displaying the fair employment poster, wage rates, and safety bulletins and posters. Emergency telephone numbers and reporting instructions for ambulance, physician, hospital, fire and police shall be posted. The bulletin board shall be located in a conspicuous place easily accessible to all and legible copies of the aforementioned data shall be displayed until work under the contract is completed. No direct payment will be made for the bulletin board.

17. QUANTITY SURVEYS (APR 1984)

a. Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place

b. The Contractor shall conduct the original and final surveys and surveys for any periods for which progress payments are requested. The surveys shall be conducted by a surveyor licensed in the State of Vermont. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested

c. Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to

the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer's representative. (FAR 52.236-16)

18. SUPERINTENDENCE OF SUBCONTRACTORS (JAN 1965)

a. The Contractor shall be required to furnish the following, in addition to the superintendence required by the Contract Clause titled, "SUPERINTENDENCE BY THE CONTRACTOR

(1) If more than 50% and less than 70% of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70% or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work

b. If the Contracting Officer, at any time after 50% of the subcontracted work has been completed, finds that satisfactory progress is being made, he may waive all or part of the above requirement for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made. (DoD FAR Supplement 52.236-7008)

19. SCHEDULING AND DETERMINATION OF PROGRESS

Pursuant to the Contract Clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, the Contractor shall prepare and submit for approval a practicable project schedule. The type of schedule and detailed requirements as well as timing of this submittal shall be as specified in specification section 01311 PROJECT SCHEDULE-BAR CHART.

This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. When changes are authorized that result in contract time extensions, Contractor shall submit a modified schedule for approval by the Contracting Officer.

The terms of Contract Clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, with reference to overtime, extra shifts, etc., may be invoked when the Contractor fails to start or complete work features or portions of same by the time indicated by the milestone dates on the approved project schedule, or when it is apparent

to the Contracting Officer from the Contractor's actual progress that these dates will not be met.

Neither on the project schedule as originally submitted nor on any updated periodic schedules which the Contractor is required to prepare and submit, shall the actual progress to be entered include or reflect any materials which even though on the site, are not yet installed or incorporated in the work. For payment purposes only, an allowance will be made by the Contracting Officer of up to 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to Contract Clauses, PAYMENT UNDER FIXED- PRICE CONSTRUCTION CONTRACTS. The making of such an allowance will be contingent upon a determination by the Contracting Officer that the Contractor's compliance with the quality control requirements of the contract is more than satisfactory.

20. PROCEDURES FOR SUBMISSION AND PAYMENT OF ALL CONTRACT PAYMENTS

In addition to the requirements contained in the Contract Clause entitled "PAYMENTS UNDER FlXED-PRICE CONSTRUCTION CONTRACTS" and to implement the requirements of the Prompt Payment Act Amendments of 1988, P.L. 100-496, the following shall apply to all payments made under this contract:

a. At the time of submission of the progress chart, the contractor shall submit for approval by the Contracting Officer or his authorized representative a breakdown of the contract work which shall be to the degree of detail required by the Contracting Officer or his representative to effect reasonable progress payments. The Contracting Officer or his representative shall review this breakdown within 30 calendar days after receipt and either advise the contractor that it is approved or disapproved, and if disapproved the reasons for disapproval. Only after the breakdown is approved shall any payment invoice be accepted from the contractor and any payment made to him. The Contracting Officer can determine if it is in the best interest of the Government to make payment without an approved breakdown, however, in no case shall more than 10% of the contract amount be paid unless the breakdown is approved.

b. The contractor shall submit his request for payment by submission of a proper invoice to the office or Person(s) designated in subparagraph (c). For purposes of payment a "proper invoice" is defined as the following:

(1) An estimate of the work completed in accordance with the approved breakdown indicating the percentage of work of each item and the associated costs.

(2) A properly completed Eng Form 93 and 93a (where required).

(3) All contractual submissions indicated elsewhere in this contract to be submitted with payment, such as updated progress schedules, updated submittal registers, etc.

(4) The following certification executed by a responsible official of the organization authorized to bind the firm. A "responsible official" would be either a corporate officer, partner, or owner, in the case of a sole proprietorship

I hereby certify, to the best of my knowledge and belief, that –

(a) The amounts requested are only for performance in accordance with the specifications, terms and conditions of the contract;

(b) Payments to subcontractors and suppliers have been made from previous payments received under the contract and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract requirements and the requirements of chapter 39 of Title 31, United States Code; and

(c) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

(d) All required prime and subcontractor payrolls have been submitted

_____

(Name)

_____

(Title)

_____

(Date)

c. The Government shall designate the office or person(s) who shall first receive the invoice submissions and the Contractor shall be so notified at the preconstruction conference. In addition to the designated Project Engineer, the Contractor shall at the same time submit one copy of the detailed breakdown and the Eng Form 93 and 93a Form to the Area Engineer.

d. The Government representative shall return any request for payment which is deemed defective within 7 days of receipt and shall specify the defects. If the defect concerns a disagreement as to the amount of work performed and/or the amount of the payment being submitted, the Government and the contractor's representative should meet to resolve the differences and reach agreement. Upon agreement, the contractor

shall submit a new breakdown and Eng Form 93 (and 93a) and any other submissions requiring correction. These will be incorporated with the previous submittal and will then constitute a proper invoice.

e. If agreement cannot be reached, the Government shall determine the proper amount per Contract Clause, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS and process the payment accordingly. In this event, a "proper invoice" for Prompt Payment Act purposes will not have been submitted to the Government.

f. The Government shall pay the contractor in accordance with the following time frames:

(1) Progress Payments - From the date a "proper invoice" is received, in accordance with subparagraphs b and d of this clause, the Government will issue a check within 14 calendar days.

(2) Reduction in Retainage Payment. If during the course of the contract, a reduction in retainage payment is required, the Government shall issue a check within 30 calendar days after the approval of the release to the contractor by the Contracting Officer or his authorized representative.

(3) Final Payment. A final payment request shall not be considered valid until the contractor has fulfilled all contract requirements including all administrative items, payrolls, warranties, etc. and has submitted a release of claims. When the contractor has fulfilled all contract requirements and a "proper invoice" has been submitted, the Government shall issue a check within 30 days from the date of acceptance of the project by the Contracting Officer.

21. SUBMISSION OF CLAIMS

The following shall be submitted to the Contracting Officer at the following address: U.S. Army Corps of Engineers, New York District, 26 Federal Plaza, New York, New York 10278-0090:

a. claims referencing or mentioning the Contracting Disputes Act of 1978
b. requests for a written decision by the Contracting Officer
c. claims certified in accordance with the Contract Disputes Act of 1978

No other Government representative is authorized to accept such requests. A copy shall also be provided to the Authorized Representative of the Contracting Officer.

The Contractor shall also provide the Contracting Officer with a copy of any requests for additional time, money or interpretation of contract requirements which were provided to the Authorized Representative of the Contracting Officer and which have not been resolved after 90 days.

22. PROGRESS PAYMENTS

Progress Payments made pursuant to the PAYMENTS TO CONTRACTOR clause for any item of work in the bid schedule shall be based on the contract unit price or lump sum amount set forth in the bid schedule for that item of work. If the amount of the unit price or lump sum bid for any item of work is in excess of 125% of the Government estimate for such item, the Contracting Officer may require the contractor to produce cost data to justify the price of the bid item. Failure to justify the bid item price to the satisfaction of the Contracting Officer may result in payment of an amount equal to 125% of the Government estimate for such bid item upon completion of work on the item and payment of the remainder of the bid item price upon final acceptance of all contract work.

23. PERFORMANCE EVALUATION OF CONTRACTOR (1985 JAN HQ USACE)

As a minimum, the Contractor's performance will be evaluated upon final acceptance of the work. However, interim evaluation may be prepared at any time during contract performance when determined to be in the best interest of the Government.

The format for the evaluation will be SF 1421, and the Contractor will be rated either outstanding, satisfactory, or unsatisfactory in the areas of Contractor Quality Control, Timely Performance, Effectiveness of Management, Compliance with Labor Standards, and Compliance with Safety Standards. The Contractor will be advised of any unsatisfactory rating, either in an individual element or in the overall rating, prior to completing the evaluation, and all contractor comments will be made a part of the official record. Performance Evaluation Reports will be available to all DoD Contracting Officers for their future use in determining Contractor responsibility, in compliance with DFARS 36.201(c)(1).

24. SAFETY AND HEALTH REQUIREMENTS MANUAL

The Contractor shall comply with all pertinent provisions of the latest edition of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385- 1-1, in effect on the date of the solicitation. The latest edition, as referenced in the Accident Prevention Clause of the CONTRACT CLAUSES, is dated November 2003. Changes of EM 385-1-1 are available at http://www.hg.usace.army.mil (at the HQ homepage, select Safety and Occupational Health). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation.

Before commencing the work, the Contractor shall - (1) Submit a written proposal for implementing the Accident Prevention Plan; and (2) Meet with representatives of the

Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

25. AUTHORIZED CONSTRUCTION AREA AND TRESPASSING

The Contractor shall not inflict damage upon land and properties outside the authorized construction area by unwarranted entry upon, passage through, damage to, or disposal of, material on such land or property. The Contractor may make a separate agreement with any other party, regarding the use of, or right to, land or facilities outside the contract area. If such an agreement is made, it shall be in writing and a copy shall be furnished the Contracting Officer. The Contractor shall hold and save the Government, its officers, and agents free from liability of any nature or kind arising from any trespassing or damage occasioned by his operations.

26. DAMAGE TO WORK

The responsibility for damage to any part of the permanent work shall be as set forth in the article of the contract clause entitled "PERMITS AND RESPONSIBILITIES". However, if in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane, severe coastal storm or tornado, which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor will make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit or lump-sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment, pursuant to Contract Clause entitled CHANGES, will be made as full compensation for the repairs of that part of the permanent work for which there are not applicable contract unit or lump-sum prices. Except as herein provided, damage to all work, utilities, materials, equipment, and plant, including temporary construction and utilities, pavements, and other property along the routes used by the Contractor's pipelines and/or land vehicles, shall be repaired to the satisfaction of the Contracting Officer, the State of New Jersey, and the utilities companies, at the contractor's expense regardless of the cause of such damage.

27. ENVIRONMENTAL LITIGATION (1974 NOV) (OCE)

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If it is determined that the order is not due in any part to acts or omissions of the

Contractor or a Subcontractor at any tier other than as required by the terms of this contract, such suspension, delay, or interruption shall be considered as if ordered by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "environmental litigation", as used herein, means a lawsuit alleging that the work will have an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment. (ECI 7-671.10)

28. LABOR-ADDITIONAL REQUIREMENTS

Fringe benefits statement: The method of payment of applicable fringe benefits will be indicated on DD Form 879, Statement of Compliance, and attached to each weekly payroll.

29. TIME EXTENSIONS (APR 1984)

a. Notwithstanding any other provisions of this contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule. (FAR 52.211-13)

b. Time Extensions for Unusually Severe Weather.

(1) This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed Price Construction)". In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

a. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

b. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the contractor.

(2) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
(31)	(28)	(31)	(9)	(8)	(9)	(8)	(10)	(7)	(9)	(10)	(31)

(3) Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the contractor's scheduled workday. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2, above, the contracting officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)".

30. VEHICULAR AND OTHER TRAFFIC CONTROL

The Contractor shall be required to provide and maintain barriers, flagmen and warning devices during construction and hauling operations, which may interfere with vehicular and other traffic. The Contractor shall also be required to effect necessary traffic control as required by the appropriate agencies. All safety precautions shall be subject to the approval of the Contracting Officer.

31. STORAGE AREAS

The Contractor may store his required materials and equipment within the "Work Limits" shown on the drawings. No storage will be allowed outside the designated work limits. The Contractor may make his own arrangements with parties or agencies involved for storage areas outside the work limits.

32. VERIFICATION OF SMALL BUSINESS UTILIZATION

Not required.

33. PRECONSTRUCTION CONFERENCE

a. A pre-construction conference will be arranged by the Contracting Officer, or his Representative, after award of contract and before commencement of work. The Contracting Officer's representative will notify the Contractor of the time and date set for the meeting. At this conference the Contractor will be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters. Additionally, a schedule of required submittals will be discussed.

b. The Contractor shall bring to this conference the following items in either completed or draft form:

- The Contractor's order of work.

- Accident Prevention Plan. (See Accident Prevention Clause in Section 00700 and paragraph 25 of this Section concerning Safety and Health Requirements Manual)

- Quality Control Plan. (See Section 01451)

- Letter appointing Superintendent.

- List of subcontractors, if any.

34. COORDINATION CONFERENCES

Routine coordination conferences will be scheduled by the Contracting Officer throughout the life of this contract. Coordination conferences will be held to discuss contract administration, Contractor quality control, phasing, scheduling, and other aspects relating to this construction. The Corps of Engineers and the Contractor will be represented at each of these meetings. Similar information concerning replacement personnel shall be forwarded to the Contracting Officer, should any replacement be required at any time during the life of this contract. Coordination conferences will be scheduled to occur on a weekly basis.

35. CONTRACTOR WORKING HOURS

Unless specifically authorized by the Contracting Officer, contract work shall be restricted to the hours of 7:00 A.M. to 6:00 P.M., Mondays through Saturdays. No work will be permitted on Sundays and Federal and State legal holidays. The Contractor shall comply with paragraph 01.c.04 of EM 385-1-1, the U.S. Army Corps of Engineers Safety and Health Requirements Manual, in effect on the date of this solicitation.

36. PARTNERSHIP IMPLEMENTATION PLAN

Not required.

37. GOVERNMENT RESIDENT MANAGEMENT SYSTEM

Not required.

38. CONSTRUCTION PROJECT SIGNS AND PUBLIC SAFETY SIGN

The Contractor shall construct three signs, one for project identification, one to show on-the-job safety performance, and one public safety sign. Sample sign drawings together with mounting and fabrication details are provided at the end of this section. The signs shall be erected within 15 calendar days after the date of Notice to Proceed. The project identification and safety performance signs are to be displayed side by side and mounted for reading by passing viewers. The public safety sign shall be the same size as the project signs.

Exact placement location will be designated by the Contracting Officer. Panels are fabricated using HDO (High Density Overlay) plywood with dimensional lumber uprights and bracing. The sign faces are non-reflecting vinyl. All legends are to be die-cut or computer-cut in the sizes and type-faces specified and applied to the white panel background following the graphic formats shown on the attached sheets. The Communications Red panel on the left side of the construction project sign with Corps signature (reverse version) is screen printed onto the white background.

The Contractor shall maintain the signs in good condition throughout the construction period. No separate payment will be made for erecting and maintaining the signs and all costs in connection therewith will be considered the obligation of the Contractor. Upon completion of the project, the Contractor shall remove the signs from the project site.

39. INSURANCE PROCURED BY CONTRACTOR

a. The Contractor shall procure and maintain during the entire period of this performance under this contract the attached insurance policies:

(1) Commercial General Liability Insurance in limits of not less than Five Million Dollars ($5,000,000) combined single limit per occurrence for bodily injury, death, personal injury and property damage, including but not limited to coverage for Broad Form Property Damage. Such coverage shall not contain any environmental exclusion clause and there shall be no exclusions for property damage arising out of

explosion, collapse or underground property damage hazards and no exclusion for waterfront activities.

(2) The policies described above shall be endorsed (i) to include The Town of Waterbury and State of Vermont as additional insured and (ii) to provide that notice of an occurrence to the insurance company from any insured shall serve as notice from all insured.

(3) Comprehensive Automobile Liability Insurance in limits of not less than five million dollars combined single limit per occurrence for bodily injury, death, and property damage covering all owned, non-owned and hired vehicles in connection with the work to be performed in connection with this permit.

(4) Certificates of Insurance evidencing the issuance of all insurance required hereby, and guaranteeing at least thirty (30) days prior notice to the Government of cancellation or non-renewal, shall be delivered to The Vermont Department of Environmental Protection, and Town of Waterbury, prior to entry of the Government's contractors upon the project area, or, in the case of new or renewal policies replacing any policies expiring during the period, no later than thirty (30) days before the expiration dates of such expiring policies.

b. Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer.

c. The Contractor agrees to insert the substances of this clause, including paragraph c., in all subcontracts hereunder.

40. LABOR SURPLUS AREA EXPENDITURE REQUIREMENTS (JUL 1978)

a. The site of the construction work is located in an area determined by the Secretary of Labor to be a Labor Surplus Area. Accordingly the Contractor hereby agrees to perform a substantial portion of the contract work in this or in any other labor surplus area. "Substantial portion" means the aggregate costs that will be incurred by the Contractor and his first-tier subcontractors and suppliers, on account of manufacturing, production, or services performed in this or any labor surplus area, and the costs that will be incurred by second-tier and lower-tier subcontractors on the construction site will exceed fifty percent (50%) of the price of this contract.

b. Upon request, the Contractor shall furnish to the Contracting Officer data to substantiate that this obligation is satisfied.

b. The Contracting Officer will furnish upon request a list of labor surplus areas.

41. PERMITS

a. The permits required for this project, Shoreline Encroachment Permit and the Individual Discharge Permit for Storm Water Runoff from Construction Sites. The Contractor shall be required to sign the Request for Co-Permittee Status form once the Individual Discharge Permit for Storm Water Runoff is issued.

42. Bioengineering Specialists

A bioengineering professional with experience in constructing steep, vegetated slopes shall be present to oversee the work of the contractor. This professional shall have at a minimum a bachelor degree in one of the following disciplines: landscape architecture, physical science, or engineering, with an emphasis on natural resources. Must be familiar with local nurseries for plant materials, working with construction schedules; slope stability; and bioengineering slope criteria. They must have experience in New England for developing bioengineering solutions for stream bank and slope stabilization for a large scale projects. They must have experience in constructing/altering vegetated landscapes in Vermont, or within a 100 mile radius of the project site. They must have experience in preparing at least 7 sites for plantings, using erosion control fabrics and live stakes or branches.

The bioengineering specialist shall visit the site once a week while the earthwork is being done, and twice a week while the vegetation is being planted. The bioengineering specialist will direct the contractor to perform alterations when necessary. The bioengineering specialist will directly report progress to the contracting officer, and the contracting officer will insure that the advice of the bioengineering specialist is considered by the contractor. The bioengineering professional will prepare site status sheets for all days they are at the site for the contracting officer. The bioengineering specialist will consult with and address any concerns of the project design members from USACE or the Vermont Agency of Natural Resources.

PROJECT IDENTIFICATION SIGN
CIVIL WORKS PROJECT

The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel in the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full corps Signature (reverse version) is to be screen printed Communications Red on the white background. The castle insignia will be furnished by the Government in pressure sensitive vinyl for affixing by the Contractor. See attached sheet for fabrication and mounting guidelines.

Legend Group 1: One- to two-line description of Corps relationship to project
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Place below 10.5" Reverse Signature (6" Castle)
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 3: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

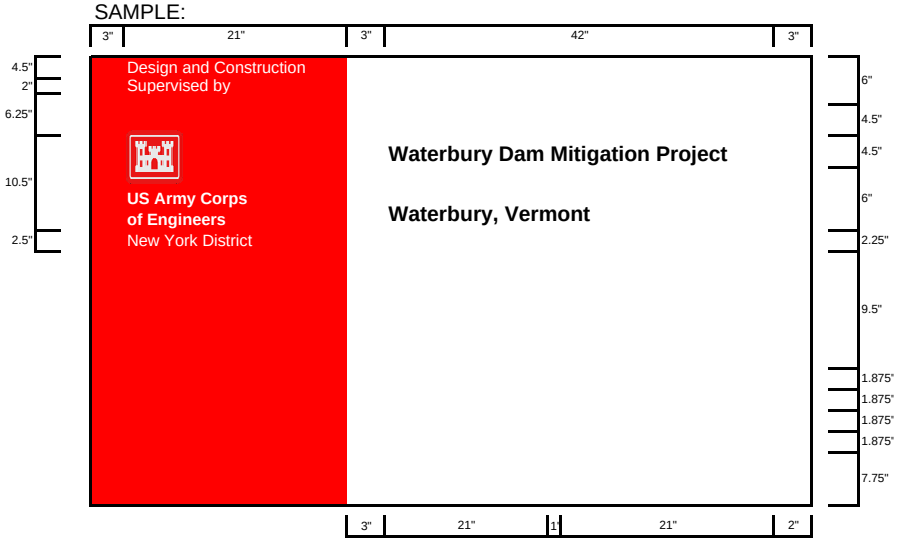
Legend Group 4: One-to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Group 5a-b: One-to-five line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right upper and lower case with initial capitals only as shown. Letter and word spacing to follow Corps standards as specified in * Appendix D

SAMPLE:



(Dimensions are in inches)

Sign Type	Legend	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4' x 6'	4' x 4'	HDO-3	48"	WH-RD/BK

* Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Group 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group1: Standard two-line title "safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

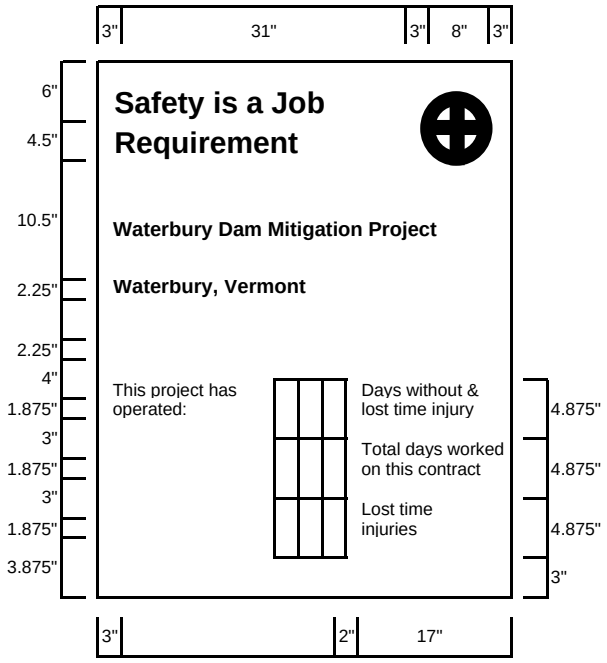
Legend Group 3: One - to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black

Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060: aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5"x.5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D. *

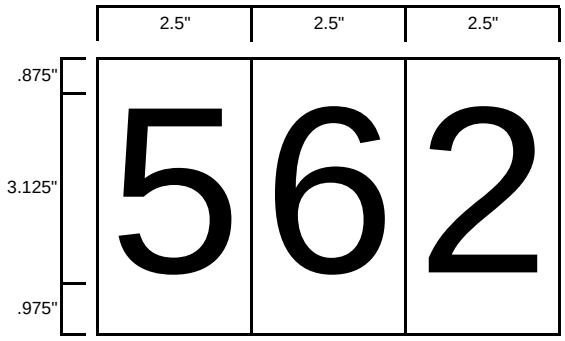


Dimensions inches.

See attached sheet for fabrication and mounting guidelines.

* Refer to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Sign Type	Legend Size	Panel Size	Post Size	Specifications Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4"x4"	4"x4"	HDO-3	48"	WH/BK-GR



US ARMY

CORPS OF ENGINEERS, NEW YORK DISTRICT

WATERBURY DAM MITIGATION PROJECT
WATERBURY, VERMONT

CONTRACTOR:
FUNDED BY:
COMPLETION DATE:

FOR YOUR SAFETY

1. DO NOT ENTER DESIGNATED WORK AREAS
2. OBEY ALL LOCAL REQUIREMENTS CONCERNING PROHIBITED ACTIVITIES

DISTRICT ENGINEER: COLONEL RICHARD J. POLO, JR.

Fabrication and Mounting Guidelines

As Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDD specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2'x4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5"). **

Drill and Insert six (6) .375" T-nuts from the front face of the HDD sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

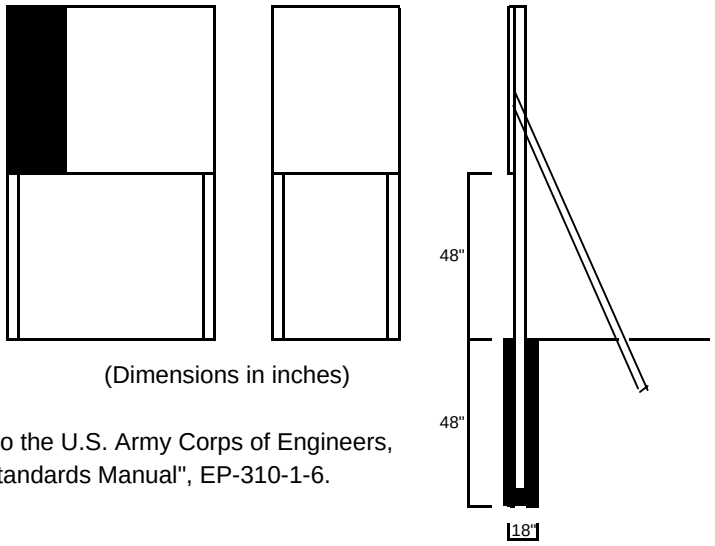
Apply graphic panel to prepared HDD plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4"x4" treated Douglas Fir or Southern Yellow Pine. No.1 or better. Post to be 12" long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4"x.375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4" hole. Local soil conditions and/or wind loading may require bolting additional 2"x4" struts on inside face of uprights to reinforce installation as shown

Detailed specifications for HDD plywood panel preparation are provided in Appendix B.**

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.



(Dimensions in inches)

** Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EP-310-1-6.

Construction Project Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor /A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign
Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

Section 00900 -

WAGE RATE DETERMINATION
General Decision Number VT030025 06/13/2003 VT25

Superseded General Decision No. VT020025 sg 3/10/05

State: Vermont

Construction Type:
HEAVY

County(ies):
ADDISON LAMOILLE WASHINGTON
CALEDONIA ORANGE
ESSEX ORLEANS

HEAVY CONSTRUCTION PROJECTS (Excluding Water & Sewer Lines and Treatment Plants)

Modification Number Publication Date
0 06/13/2003

COUNTY(ies):
ADDISON LAMOILLE **WASHINGTON**
CALEDONIA ORANGE
ESSEX ORLEANS

SUVT2004A 11/19/1996

	Rates	Fringes
ELECTRICIANS	14.00	2.48
LABORERS	8.52	1.22
POWER EQUIPMENT OPERATORS:		
Backhoes	10.50	
Bulldozer	13.69	6.40
Excavator	15.00	1.17
TRUCK DRIVERS		
Tandem Dump	11.55	1.53

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates

listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests

for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review

Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

MAIN TABLE OF CONTENTS

SECTION 01311

PROJECT SCHEDULE: BAR CHART
NYD EDITION 08/97

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-12 Schedules

Initial Project Schedules; G, RO

Revised Project Schedule; G, RO

Periodic Schedule Update; G, RO

SD-14 Progress Curve

Report Format; G, RO

SD-15 Narrative Reports with Schedule Updates

Report Format; G, RO

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

Pursuant to the Contract Clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, and Special Contract Requirements SCHEDULING AND DETERMINATION OF PROGRESS the Contractor shall prepare and submit for approval a practicable project schedule. The schedule will be submitted within five (5) days after receipt of Notice to Proceed or as otherwise determined by the Contracting Officer.

3.2 BASIS FOR PAYMENT

The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

3.3 PROJECT SCHEDULE

The Project Schedule shall be in the form of a chart consisting of a series of bars graphically indicating the sequence proposed to accomplish each work feature or operation. Each bar will represent a work features, system or series of activities within the construction project. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed

and indicating calendar days to completion. Interdependence of status of activities shall be shown. Horizontal time scale shall allow identification of the first work day of each week, which shall be identified. Space between bars shall be allowed for future revisions and notations.

3.4 PROGRESS CURVE

With the Project Schedule the Contractor shall also submit for approval a progress curve which reflects the intended schedule for completing the work. The progress curve (S-Curve) will be plotted to reflect Cumulative Progress (Percent) based on placement along the y-axis and Time along the x-axis.

3.5 SCHEDULE AND PROGRESS CURVE UPDATES

Approved Schedule and Progress Curve will be updated monthly during the entire duration of construction. Not later than four days after the Monthly Progress Meeting the Contractor shall submit updated Project Schedule and Progress Curve. The updated versions shall include all approved contract revisions, progress of each activity to date of submission, and adjustments. Contractor shall also provide a very brief narrative report as required to indicate any problem areas, anticipated delays, impact on schedule, and corrective action.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly on-site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor will describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

-- End of Section --

SECTION 01330

SUBMITTAL PROCEDURES
(CENAN-CO-CQ 3/04)

PART 1 GENERAL

1.1 SUMMARY

This section covers procedures to be used in making submittals called for in the contract documents. In contracts which contain specific "Contractor Quality Control" requirements, the Contractor's Quality Control Representative shall carry out duties associated with submittal procedures. In contract which do not contain specific CQC requirements, reference to "CQC Representative" shall be interpreted as reference to the Contractor's authorized representative, and references to "CQC Requirements" or "CQC Clauses" shall be interpreted as "requirements or clauses elsewhere in the contract."

1.2 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-03 Product Data

Preprinted manufacturer material describing a product, system, or material, such as catalog cuts.

SD-04 Samples

Samples, including both fabricated and un-fabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-05 Design Data

Submittals, which provide calculations, descriptions, or documentation regarding the work.

SD-06 Test Reports

Reports of inspections or tests, including analysis and interpretation of test results.

SD-07 Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system or material, attesting that the product, system or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements, which are being certified.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material; including special notices and material safety data sheets, if any, concerning impedances, hazards, and safety precautions.

SD-09 Manufacturer's Field Reports

Daily reports from specially suppliers to the contractor that provide information, data, tests result for a product.

SD-10 Operation and Maintenance Data

Data, which forms a part of an operation and maintenance manual.

SD-11 Closeout Submittals

All data, documentations, information, and drawings to achieve contract closeout.

SD-12 Schedules

All data, documentations, information, and drawings to achieve contract closeout.

SD-13 Records

Documentation to record compliance with technical or administrative requirements.

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approved/Acceptance (G)

Government approval is required for all specification submittal items found in specifications having structural steel connections, extensions of design, Fire Protection/Life Safety, and Commissioning of HVAC, and other items as designated by the Contracting Officer. Government approval/ acceptance (G) is also required for all submittals designated as such in the technical specifications. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings." The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.3.2 Information Only (FIO)

All Contractor submittals not requiring Government approval/acceptance will be for information only. FIO submittals are identified in the approved submittal register. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above. FIO Submittals will be retained at the project site and reviewed prior to Preparatory Meetings in accordance with CEGS-01451, CONTRACTOR QUALITY CONTROL.

1.3.3 Government Approval/Acceptance (G)

All submittals classified for Government Approval/Acceptance (G) are identified in the approved submittal register. A code following the "G" designation indicates the approving authority; codes of "RO" for Resident Office approval, "DO" for NYD Engineering Division approval, and "AE" for Architect-Engineer approval.

1.4 APPROVED/ACCEPTANCE SUBMITTALS

The Contracting Officer's approval/acceptance of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.5 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.6 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's

Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the Contractor's Quality Control CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER

At the end of this section is one set of ENG Form 3288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" "b" and "s" through "aa" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 30 calendar days after Notice to Proceed (15 days if construction time is 180 days or less). If the Quality Control System (QCS) Module is required to be utilized on this contract as required by Spec. Section 01312 Quality Control System, then the contractor will be required to process and update the submittal register electronically, and make appropriate electronic submissions to the Government. Otherwise, the Contractor shall enter the submittal register in an appropriate electronic format such as MS Excel, manually. In both cases, the Contractor shall update the submittal register electronically, and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated. NOTE: The Contractor is required to add additional entries to the Submittal Register for all items requiring multiple submittals, including Formwork Shop Drawings per Lift, Concrete Reinforcement per Lift, Concrete Lift Drawings per Lift, Multiple Shop Assembly Drawings, etc. These entries should be made prior to original submission of the submittal register within 30 days of Notice to Proceed.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 10 calendar days shall be allowed and shown on the register for review and approval of submittals for food service equipment, refrigeration and HVAC control systems, computer software for specialty systems, electrical substations, and studies including electrical system coordination studies.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall

be used for submitting both Government approved/accepted and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

If the contractor is required in another section of the specifications to utilize the Quality Control System (QCS), the contractor will be required to generate and process this form electronically using the QCS System.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

At the Quality Control Coordination meeting, or preconstruction conference, the Contractor shall ascertain the name and address of each individual, agency, or firm who is designated to normally receive items for approval, for information or samples. The contractor shall complete ENG Form 4025, entering each item requiring a separate approval action as a separate item on the form, for each transmittal. A transmittal may consist of one or more 4025 sheets. The transmittal, consisting of ENG Form 4025 plus all applicable submittals, is then sent to the appropriate individual. On critical items the Contractor is encouraged to confirm receipt via telephone. The Contractor shall submit seven copies of submittals for approval and one for items for information.

3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval/accepteance by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and three copies of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the

Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

-- End of Section --

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION 1 - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL
SPECIFICATION SEC. NO *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR COTRA. CAT., CURVE DRAWINGS OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No.6)* *h.*	FOR CE USE CODE *I*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURE RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittal under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effort shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings.
Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply
as noted with contract requirements.

G -- Other (Specify)

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Waterbury Dam Mitigation Project

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01311	Initial Project Schedules		G	RO												
			Revised Project Schedule		G	RO												
			Periodic Schedule Update		G	RO												
			Report Format		G	RO												
			Report Format		G	RO												
		01355A	SD-01 Preconstruction Submittals															
			Environmental Protection Plan	1.7	G	RO												
		01356A	SD-07 Certificates															
			Mill Certificate or Affidavit	2.1.3	G	RO												
		01525	SD-01 Preconstruction Submittals															
			Accident Prevention Plan (APP)	1.7	G	RO												
			Activity Hazard Analysis (AHA)	1.8	G	RO												
			Crane Critical Lift Plan	1.7.1	G	RO												
			Proof of qualification		G	RO												
			SD-06 Test Reports															
			Reports	1.12														
			Accident Reports	1.12.1														
			Monthly Exposure Reports	1.12.3														
			Crane Reports	1.12.4														
			Regulatory Citations and Violations															
			SD-07 Certificates															
			Confined Space Entry Permit	1.9														
			Hot Work Permit	1.9														
			Machinery & Mechanized Equipment Certification Form															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Waterbury Dam Mitigation Project

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02230	SD-03 Product Data															
			Tree Paint		G	RO												
		02233	SD-07 Certificates															
			Testing Laboratory Qualifications		G	RO												
		02370	SD-03 Product Data															
			Geosynthetic Binders		G	RO												
			Hydraulic Mulch	2.2.10	G	RO												
			Geotextile Fabrics		G	RO												
			Equipment		G	RO												
			Finished Grade	3.1.1	G	RO												
			Erosion Control Blankets	2.3	G	RO												
			SD-04 Samples															
			Materials		G	RO												
			SD-06 Test Reports															
			Hydraulic Mulch	2.2.10	G	RO												
			Erosion Control Blankets	2.3	G	RO												
			SD-07 Certificates															
			Hydraulic Mulch	2.2.10	G	RO												
			Synthetic Soil Binders	2.1.1	G	RO												
			Erosion Control Plan		G	RO												
			Construction Work Sequence		G	RO												
			Schedule															
			Installer's Qualification		G	RO												
			Seed	2.3.2	G	RO												
			Tackifier	2.2.11	G	RO												
			Wood By-Products	2.2.6	G	RO												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Waterbury Dam Mitigation Project

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02370	Wood Cellulose Fiber	2.2.3	G	RO												
			SD-10 Operation and Maintenance															
			Data															
			Maintenance Instructions	3.6.1.1	G	RO												
		02378A	SD-04 Samples															
			Geotextile		G	DO												
			SD-07 Certificates															
			Geotextile		G	DO												
		02380	SD-03 Product Data															
			Riprap	2.4.2	G	RO												
			Bedding Material	2.1	G	RO												
			SD-06 Test Reports															
			Gradation Test	2.2.1.3	G	RO												
			Evaluation Testing of Stone	2.2.1.1	G	RO												
			Bedding Material	2.1	G	RO												
			Bulk Specific Gravity		G	RO												
			SD-07 Certificates															
			Stone	1.5.1	G	RO												
			Bedding Material	2.1	G	RO												
			Laboratory	2.2.1.1	G	RO												
			Weigh Scale Certification		G	RO												
			Certified Weight Scale Tickets		G	RO												
		02921A	SD-03 Product Data															
			Delivery Schedule		G	RO												
			Seed	2.1	G	RO												
			Delivered Topsoil		G	RO												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Waterbury Dam Mitigation Project

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02921A	pH Adjusters		G	RO												
			Fertilizer	2.3.2	G	RO												
			Mulch	2.4	G	RO												
			Organic Material	2.3.3	G	RO												
			Soil Conditioner	2.3.4	G	RO												
			Equipment	3.1	G	RO												
			Equipment	3.1.5	G	RO												
			Finished Grade		G	RO												
			Quantity Check	3.6														
			Soil Amendments Testing		G	RO												
			SD-04 Samples															
			Delivered Upland Topsoil		G	RO												
			Soil Amendments	2.3	G	RO												
			Mulch	2.4	G	RO												
			SD-06 Test Reports															
			Equipment	3.1	G	RO												
			Equipment	3.1.5	G	RO												
			Germination and Purity Test for Seed		G	RO												
			Soils Test		G	RO												
			Soil Amendments	2.3	G	RO												
			SD-07 Certificates															
			One-year Plant Guarantee - Seeding		G	RO												
			Testing Laboratory Qualifications		G	RO												
		02930	SD-01 Preconstruction Submittals															

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Waterbury Dam Mitigation Project

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION		APPROVING AUTHORITY						
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(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02930	Plant Material Order		G	RO												
			Estimated Planting Schedule		G	RO												
			Arrival of Plant Material															
			SD-03 Product Data															
			Brush Layers		G	RO												
			Live Stakes		G	RO												
			Upland Vegetation		G	RO												
			Shrub/Tree Fertilizer		G	RO												
			Mycorrhizal Fungi Inoculum		G	RO												
			pH adjusters		G	RO												
			Organic material		G	RO												
			Soil Conditioner		G	RO												
			Delivery Schedule		G	RO												
			Field Stockpiling Sites		G	RO												
			Equipment		G	RO												
			Finished Grade and Wetland		G	RO												
			Topsoil															
			Soil Amendments Testing		G	RO												
			SD-04 Samples															
			Wetland Topsoil		G	RO												
			Soil Amendments		G	RO												
			SD-06 Test Reports															
			Equipment		G	RO												
			Soils Test		G	RO												
			SD-07 Certificates															
			One-year Plant Guarantee		G	RO												

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							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		02930	Nursery Certifications		G	RO												
			SD-11 Closeout Submittals															
			As-Planted Plan		G	RO												

SECTION 01355A

ENVIRONMENTAL PROTECTION
02/05

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. AIR FORCE (USAF)

AFI 32-1053	(1999) Pest Management Program

U.S. ARMY (DA)

DA AR 200-5	(1999) Pest Management

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety -- Safety and Health Requirements
WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

33 CFR 328	Definitions of Waters of the United States
40 CFR 152 - 186	Pesticide Programs
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 279	Standards for the Management of Used Oil
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 68	Chemical Accident Prevention Provisions

1.2 DEFINITIONS

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of and the requirement so the National Pollution Discharge Elimination System (NPDES) permit referenced.

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Project Pesticide Coordinator

The Project Pesticide Coordinator (PPC) is an individual that resides at a Civil Works Project office and that is responsible for oversight of pesticide application on Project grounds.

1.2.5 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor shall discharge water at a rate, which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" shall occur. Land Application shall be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.6 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.7 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of

personnel and animals; attack or damage real property, supplies, equipment,or vegetation; or are otherwise undesirable.

1.2.8 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers,creeks, and/or "waters of the United States" and would require a permit to discharge water from the governing agency.

1.2.9 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.10 Wetlands

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with WETLAND MANUAL.

1.3 GENERAL REQUIREMENTS

The Contractor shall minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract. The Contractor shall comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations.

1.4 SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

1.5 PAYMENT

No separate payment will be made for work covered under this section. The Contractor shall be responsible for payment of fees associated with environmental permits, application, and/or notices obtained by the Contractor. All costs associated with this section shall be included in the contract price. The Contractor shall be responsible for payment of all fines/fees for violation or non-compliance with Federal, State, Regional and local laws and regulations.

1.6 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURE:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RO

The Contractor shall submit an environmental protection plan within 15 days after receipt of the notice to proceed.

1.7 ENVIRONMENTAL PROTECTION PLAN

The Contractor shall submit an environmental protection plan within 15 days after receipt of the notice to proceed. Approval of the Contractor's plan will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Environmental Protection Plan shall be current and maintained onsite by the Contractor. The environmental protection plan shall include, but shall not be limited to, the following:

a. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

b. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

c. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel.

d. Description of the Contractor's environmental protection personnel training program.

e. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. The plan shall include a construction sequence, monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations.

f. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

g. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

h. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

i. Drawing showing the location of borrow areas.

j. The Spill Control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The Spill Control Plan supplements the requirements of EM 385-1-1. This plan shall

include as a minimum:

1. The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Contracting Officer, the Northport/East Northport Fire Department (631) 261-0360 in addition to the legally required Federal, State and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

2. The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

3. Training requirements for Contractor's personnel and methods of accomplishing the training.

4. A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

5. The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

6. The methods and procedures to be used for expeditious contaminant cleanup.

k. A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris. The plan shall include schedules for disposal. The Contractor shall identify any subcontractors responsible for the transportation and disposal of solid waste. Licenses or permits shall be submitted for solid waste disposal sites that are not a commercial operating facility. Evidence of the disposal facility's acceptance of the solid waste shall be attached to this plan during the construction. The Contractor shall attach a copy of each of the Non-hazardous Solid Waste Diversion Reports to the disposal plan. The report shall be submitted on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and shall be for the previous quarter (e.g. the first working day of January, April, July, and October). The report shall indicate the total amount of waste generated and total amount of waste diverted in cubic yards or tons along with the percent that was diverted.

l. A recycling and solid waste minimization plan with a list of measures to reduce consumption of energy and natural resources. The plan shall detail the Contractor's actions to comply with and to participate in Federal, State, Regional, and local government sponsored recycling programs to reduce the volume of solid waste at the source.

m. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

n. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended

actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials. In accordance with EM 385-1-1, a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time shall be included in the contaminant prevention plan. As new hazardous materials are brought on site or removed from the site, the plan shall be updated.

o. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, the plan shall include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, the plan shall include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented. If surface discharge will be the method of disposal, a copy of the permit and associated documents shall be included as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, the plan shall include documentation that the Waste Water Treatment Plant Operator has approved the flow rate, volume, and type of discharge.

p. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. The plan shall include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Contracting Officer.

q. A pesticide treatment plan shall be included and updated, as information becomes available. The plan shall include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional specific requirements.

1.7.1 Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.8 PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the

Contracting Officer shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. This survey report shall be signed by both the Contractor and the Contracting Officer upon mutual agreement as to its accuracy and completeness. The Contractor shall protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.9 SPECIAL ENVIRONMENTAL REQUIREMENTS

The Contractor shall comply with the special environmental requirements at the end of this section.

1.10 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings,plans and specifications which may have an environmental impact will be subject to approval by the Contracting Officer and may require an extended review, processing, and approval time. The Contracting Officer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Contracting Officer determines that the proposed alternate method will have an adverse environmental impact.

1.11 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of the proposed corrective action and take such action when approved by the Contracting Officer. The Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Contracting Officer may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

1.12 SPECIAL ENVIRONMENTAL PROTECTION REQUIREMENTS

1.12.1 Tree Protection

Existing trees to be saved should be flagged and/or fenced to prevent damage during the construction period. No ropes, cables, or guys shall be fastened to or attached to any tree(s) for anchorage unless specifically authorized by the Contracting Officer. Where such special use is permitted, the Contractor shall provide effective protection to prevent damage to the tree and other land and vegetative resources. Unless specifically authorized by the Contracting Officer, no construction equipment or materials shall be placed or used within the drip line of trees shown on the drawings to be saved. No excavation or fill shall be permitted within the drip line of trees to be saved except as shown on the drawings.

1.12.2 U.S. Department of Agriculture (USDA) Quarantined Considerations

The Contractor shall thoroughly clean all construction equipment at the prior job site in a manner that ensures all residual soil is removed and that egg deposits from plant pests are not present. The Contractor shall consult with the USDA Plant Protection and Quarantine (USDA - PPQ) jurisdictional office for additional cleaning requirements that may be necessary.

1.12.3 Commercial Borrow

Prior to bringing commercially obtained borrow material onsite, the Contractor shall provide the Contracting Officer with the location of the pit or pits, the names of the owners and operators, and the types and estimated quantities of materials to be obtained from each source.

1.12.4 Soil Disposal Areas on the Project Site

Soil disposal on project site shall be made only to the extent that they meet the requirements for materials as specified in the applicable sections of this specification. Hazardous, toxic, and radiological wastes (HTRW) shall not be disposed of on project site. Disposal operations shall be managed and controlled to prevent erosion of soil or sediment from entering nearby waters or wetlands. Disposal operations shall be developed and managed in accordance with the grading plan shown on the drawings or as approved by the Contracting Officer.

1.12.5 Disposal of Solid Wastes

Solid waste is rubbish, debris, waste materials, garbage, and other discarded solid materials (excluding clearing debris and hazardous waste as defined in following paragraphs). Solid waste shall be placed in containers and disposed on a regular schedule. All handling and disposal shall be conducted in such a way as to prevent spillage and contamination. The Contractor shall transport all solid waste off the project site and dispose in compliance with Federal, State, and local requirements.

1.12.6 Clearing Debris

Clearing debris is trees, tree stumps, tree trimmings, and shrubs, and leaves, vegetative matter, excavated natural materials (e.g., dirt, sand, and rock), and demolition products (e.g., brick, concrete, glass, and metals).

a. The Contractor shall collect trees, tree stumps, tree trimmings, shrubs, leaves, and other vegetative matter; and shall transport from project site for proper disposal in compliance with Federal, State, and local requirements. The Contractor shall segregate the matter where appropriate for proper disposal. Untreated and unpainted scrap lumber may be disposed of with this debris where appropriate.

b. Excavated natural materials which meet the requirements of the specific specification may be incorporated into the project. All other materials will be transported from the project site for proper disposal in compliance with Federal, State, and local requirements.

c. Demolition products shall be transported from the project site for proper disposal in compliance with Federal, State, and local requirements.

1.12.7 Disposal of Contractor Generated Hazardous Wastes

Hazardous wastes are wastes as defined in 40 CFR 261, and as defined by applicable State and local regulations. Hazardous waste generated by construction activities shall be removed from the work area and be disposed in compliance with Federal, State, and local requirements. The Contractor shall segregate hazardous waste from other materials and wastes, and shall protect it from the weather by placing it in a safe covered location; precautionary measures against accidental spillage such as berming or other appropriate measures shall be taken. Hazardous waste shall be removed from the project site within 60 days. Hazardous waste shall not be dumped onto the ground, into storm sewers or open water courses, or into the sanitary sewer system.

1.12.8 Fuels and Lubricants

Fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants and waste oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with Federal, State, and local laws and regulations.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ENVIRONMENTAL PERMITS AND COMMITMENTS

This paragraph supplements the Contractor's responsibility under the contract clause "PERMITS AND RESPONSIBILITIES". The Contractor shall be responsible for obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations.

3.2 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the contractor shall identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, soil, or other materials displaced into uncleared areas shall be removed by the Contractor.

3.2.1 Work Area Limits

Prior to commencing construction activities, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are not to be disturbed shall be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.2.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.2.3 Erosion and Sediment Controls

The Contractor shall be responsible for providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. The area of bare soil exposed at any one time by construction operations should be kept to a minimum. The Contractor shall construct or install temporary and permanent erosion and sediment control best management practices (BMPs), as indicated on the drawings, and as specified in Section 01356A STORM WATER POLLUTION PREVENTION MEASURES. BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins.

3.2.4 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

3.2.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Erosion and sediment controls shall be provided for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas.

3.3 WATER RESOURCES

The Contractor shall monitor construction activities to prevent pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation unless otherwise indicated. All water areas affected by construction activities shall be monitored by the Contractor. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federally issued Clean Water Act permits.

3.3.1 Sheeting, Diversions, and Dewatering Operations

Construction operations for dewatering, installation and removal of sheeting, and excavation and backfill shall be controlled at all times to maintain compliance with existing State water quality standards and designated uses of the surface water body. The Contractor shall comply with the State of Vermont water quality standards and anti-degradation provisions.

3.3.2 Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments.

3.3.3 Wetlands

The Contractor shall not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.4 AIR RESOURCES

Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards.

3.4.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs. The Contractor shall comply with all State and local visibility regulations.

3.4.2 Odors

Odors from construction activities shall be controlled at all times. The odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.4.3 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the State of Vermont rules.

3.4.4 Burning

Burning shall be prohibited on the Government premises.

3.5 CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.5.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. Handling, storage, and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. A Subtitle D RCRA permitted landfill shall be the minimum acceptable off-site solid waste disposal option. The Contractor shall verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.5.2 Chemicals and Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to the ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be classified, managed, stored, and disposed of in accordance with Federal, State, and local laws and regulations.

3.5.3 Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable State and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. The Contractor shall, at a minimum, manage and store hazardous waste in compliance with 40 CFR 262 and applicable State of Vermont regulations. The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. The Contractor shall segregate hazardous waste from other materials and wastes, shall protect it from the weather by placing it in a safe covered location, and shall take precautionary measures such as berming or other appropriate measures against accidental spillage. The Contractor shall be responsible for storage, describing, packaging, labeling, marking, and placarding of hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, State, and local laws and regulations. The Contractor shall transport Contractor generated hazardous waste off Government property within 10 days in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. The Contractor shall dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility. The disposition of Contractor generated hazardous waste and excess hazardous materials are the

Contractor's responsibility.

If the Contractor has to dispose of Hazardous Wastes/Excess Hazardous Materials he/she will prepare and sign the Wastes Analysis/Wastes Profiles and Land Ban Restictions, and in accordance with these documents shall prepare Manifest for signature of the Government. The individual preparing the documents shall be properly trained in the US EPA(RCRA) and US DOT regulations covering Hazardous Wastes Shipments. The Manifest shall include the name and telephone number of the Emergency Response point of contact per US DOT requirements. The Point of Contact shall be fully knowledgeable regarding the manifests and Hazardous Wastes/Excess Hazardous Materials and shall personally staff this telephone number at all hours, day and night during the period of shipping.

3.5.4 Fuel and Lubricants

Storage, fueling and lubrication of equipment and motor vehicles shall be conducted in a manner that affords the maximum protection against spill and evaporation. Fuel, lubricants and oil shall be managed and stored in accordance with all Federal, State, Regional, and local laws and regulations. Used lubricants and used oil to be discarded shall be stored in marked corrosion-resistant containers and recycled or disposed in accordance with 40 CFR 279, State, and local laws and regulations.

3.6 RECYCLING AND WASTE MINIMIZATION

The Contractor shall participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project.

3.7 NON-HAZARDOUS SOLID WASTE DIVERSION REPORT

The Contractor shall maintain an inventory of non-hazardous solid waste diversion and disposal of construction and demolition debris. The Contractor shall submit a report to the Contracting Officer on the first working day after each fiscal year quarter, starting the first quarter that non-hazardous solid waste has been generated. The following shall be included in the report:

a. Construction and Demolition (C&D) Debris Disposed = _____ in cubic yards.

b. Construction and Demolition (C&D) Debris Recycled = _____ in cubic yards.

c. Total C&D Debris Generated = _____ in cubic yards.

d. Waste Sent to Waste-To-Energy Incineration Plant (This amount should not be included in the recycled amount) = _____ in cubic yards.

3.8 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. The Contractor shall protect these resources and shall be responsible for their preservation during the life of the Contract. If during excavation or other construction activities any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found, all

activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. The Contractor shall cease all activities that may result in impact to or the destruction of these resources. The Contractor shall secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.9 BIOLOGICAL RESOURCES

The Contractor shall minimize interference with, disturbance to, and damage to fish, wildlife, and plants including their habitat. The Contractor shall be responsible for the protection of threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations. The Contractor will be responsible for ensuring that consideration is given to prevent adverse impacts to the habitat and adhering to the guidelines (ie. erosion and sediment control installation and maintenance) stipulated within Section 01355A ENVIRONMENTAL PROTECTION and Section 01356A STORMWATER POLLUTION PREVENTION MEASURES. The Contractor shall be responsible for any violations of the stipulations as determined by the Contracting Officer or any other regulation agency.

3.10 PREVIOUSLY USED EQUIPMENT

The Contractor shall clean all previously used construction equipment prior to bringing it onto the project site. The Contractor shall ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. The Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

3.11 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection and pollution control. The Contractor shall conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Additional meetings shall be conducted for new personnel and when site conditions change. The training and meeting agenda shall include: methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.12 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". The Contractor shall, unless otherwise instructed in writing by the Contracting Officer, obliterate all signs of temporary construction facilities such as haul roads, work area,

structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. The disturbed area shall be graded, filled and the entire area seeded unless otherwise indicated.

-- End of Section --

SECTION 01356A

STORM WATER POLLUTION PREVENTION MEASURES
08/96

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 4439	(1997) Standard Terminology for Geosynthetics
ASTM D 4491	(1996) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996)) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1995) Determining Apparent Opening Size of a Geotextile
ASTM D 4873	(1995) Identification, Storage, and Handling of Geosynthetic Rolls

1.2 GENERAL

The Contractor shall implement the storm water pollution prevention measures specified in this section in a manner which will meet the requirements of and the requirement so the National Pollution Discharge Elimination System (NPDES) permit referenced.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation identified the officer that will review the submittal for the Government. The following shall be submitted in accordance with SECTION 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Mill Certificate or Affidavit; G, RO

Certificate attesting that the Contractor has met all specified requirements.

1.4 EROSION AND SEDIMENT CONTROLS

The controls and measures required by the Contractor are described below.

1.4.1 Stabilization Practices

The stabilization practices to be implemented shall include temporary seeding, mulching, geotextiles, sod stabilization, erosion control mats, protection of trees, preservation of mature vegetation, etc. On his daily CQC Report, the Contractor shall record the dates when major grading activiites occur, (e.g., clearing and grubbing, excavation, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraph UNSUITABLE CONDITIONS and NO ACTIVITY FOR LESS THAN 21 DAYS, stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have temporarily or permanently ceased.

1.4.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

1.4.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased.

1.4.2 Structural Practices

Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Structural practices shall include the following devices. Location and details of installation and construction are shown on the drawings.

1.4.2.1 Silt Fences

The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g. clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Contracting Officer.

1.4.2.2 Straw Bales

The Contractor shall provide bales of straw as a temporary structural practice to minimize erosion and sediment runoff. Bales shall be properly placed to effectively retain sediment immediately after completing each

phase of work (e.g., clearing and grubbing, excavation, embankment, and grading) in each independent runoff area (e.g., after clearing and grubbing in a area between a ridge and drain, bales shall be placed as work progresses, bales shall be removed/replaced/relocated as needed for work to progress in the drainage area). Areas where straw bales are to be used are shown on the drawings. Final removal of straw bale barriers shall be upon approval by the Contracting Officer. Rows of bales of straw shall be provided along the toe of all cut slopes and fill slopes of the construction areas and as shown on the drawings.

PART 2 PRODUCTS

2.1 COMPONENTS FOR SILT FENCES

2.1.1 Filter Fabric

The geotextile shall comply with the requirements of ASTM D 4439, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

FILTER FABRIC FOR SILT SCREEN FENCE

PHYSICAL PROPERTY	TEST PROCEDURE	STRENGTH REQUIREMENT
Grab Tensile	ASTM D 4632	100 lbs. min.
Elongation (%)		30 % max.
Trapezoid Tear	ASTM D 4533	55 lbs. min.
Permittivity	ASTM D 4491	0.2 sec-1
AOS (U.S. Std Sieve)	ASTM D 4751	20-100

2.1.2 Silt Fence Stakes and Posts

The Contractor may use either wooden stakes or steel posts for fence construction. Wooden stakes utilized for silt fence construction, should be commercial quality lumber having minimum dimensions of 1.5 inches x 1.5 inches x 36 inches or standard "T" of "U" steel posts (minimum weight of 1.33 pounds per linear foot). Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.

2.1.3 Mill Certificate or Affidavit

A mill certificate or affidavit shall be provided attesting that the fabric and factory seams meet chemical, physical, and manufacturing requirements specified above. The mill certificate or affidavit shall specify the actual Minimum Average Roll Values and shall identify the fabric supplied by roll identification numbers. The Contractor shall submit a mill certificate or affidavit signed by a legally authorized official from the

company manufacturing the filter fabric.

2.1.4 Identification Storage and Handling

Filter fabric shall be identified, stored and handled in accordance with ASTM D 4873.

2.2 COMPONENTS FOR STRAW BALES

The straw in the bales shall be stalks from oats, wheat, rye, barley, rice, or from grasses such as byhalia, bermuda, etc., furnished in air dry condition. The bales shall have a standard cross section of 14 inches by 18 inches. All bales shall be either wire-bound or string-tied. The Contractor may use either wooden stakes or steel posts to secure the straw bales to the ground. Wooden stakes utilized for this purpose, shall have a minimum dimensions of 2 inches x 2 inches in cross section and shall have a minimum length of 3 feet. Steel posts (standard "U" or "T" section) utilized for securing straw bales, shall have a minimum weight of 1.33 pounds per linear foot and a minimum length of 3 feet.

PART 3 EXECUTION

3.1 INSTALLATION OF SILT FENCES

Silt fences shall extend a minimum of 16 inches above the ground surface and shall not exceed 34 inches above the ground surface. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 6 inches wide and 6 inches deep on the upslope side of the location of the silt fence. The 6-inch by 6-inch trench shall be backfilled and the soil compacted over the filter fabric. Silt fences shall be removed upon approval by the Contracting Officer.

3.2 INSTALLATION OF STRAW BALES

Straw bales shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. Straw bales shall be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales in order to prevent deterioration of the bindings. The barrier shall be entrenched and backfilled. A trench shall be excavated the width of a bale and the length of the proposed barrier to a minimum depth of 4 inches. After the bales are staked and chinked (gaps filled by wedging with straw), the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier. Loose straw shall be scattered over the area immediately uphill from a straw bale barrier to increase barrier efficiency. Each bale shall be securely anchored by at least two stakes driven through the bale. The first stake or steel post in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or steel pickets shall be driven a minimum 18 inches deep into the ground to securely anchor the bales.

3.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation,

erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures.

3.3.1 Silt Fence Maintenance

Silt Fence Maintenance
Silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the above ground height of the barrier. Any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform to the existing grade, prepared and seeded. The immediate area occupied by the fence and any sediment deposits shall be shaped to an acceptable grade. Theareas disturbed by this shaping shall receive erosion control if required by Sections 02370 SOIL EROSION AND SEDIMENT CONTROL and 02378A GEOTEXTILE USED AS FILTERS. Sediment must be removed when accumulations reach 1/3 the height of the silt fence.

3.3.2 Straw Bale Maintenance

Straw bale barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Close attention shall be paid to the repair of damaged bales, end runs, and undercutting beneath bales. Necessary repairs to barriers or replacement of bales shall be completed promptly. Sediment deposits should be removed after each rainfall and must be removed when the level of deposition reaches approximately one-third the ground height of the barrier. Any sediment deposits remaining in place after the straw bale barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded. The areas disturbed by this shaping shall be seeded in accordance with Section 02370 SOIL EROSION AND SEDIMENT CONTROL.

3.4 INSPECTIONS

3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every seven (7) calendar days and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every month.

3.4.2 Inspections Details

Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control

measures identified in the Storm Water Pollution Prevention Plan shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan, maintenance performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site.

-- End of Section --

SECTION 01451

CONTRACTOR QUALITY CONTROL
(SHORT FORM 07/93)

PART 1 GENERAL

In order to insure Quality Control of ongoing construction work, the Contractor shall implement Clause, "Inspection of Construction", FAR 52.246-12. Personnel implementing this clause shall be considered part of the Contractor Quality Control System. In addition, the Contractor's inspection record indicating highlights of inspection activities shall be forwarded to the Government for each two week period, no later than three work days after the end of each period. Records should reflect that an adequate inspection system is in operation. As a minimum, records shall indicate dates of inspection, item inspected, results of inspection and inspector's signature.

The contract documents may require specially qualified personnel to perform control activities in areas such as data acquisition, testing, safety, etc. Staffing, activities, and reporting documentation shall be as indicated, and all such activities shall be coordinated by CQC personnel.

If the government finds substantial uncorrected deficiencies in the work and inspection records that indicate that adequate inspections are not being conducted, the Government will require more frequent inspections, prompt corrections to deficiencies and more frequent and detailed reporting, and may withhold payment as appropriate.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Used)

-- End of Section --

SECTION 01550

MOBILIZATION

Item No. 0001 - Mobilization

PART 1 GENERAL

1.1 SCOPE OF WORK

Under this item, the Contractor shall furnish and set up all necessary general facilities, including shops, storage areas, and such sanitary and other facilities as are required by the borough, county, state or federal law or regulations. Office will be provided by the Waterbury Dam Seepage Control Rehabilitation Project. The cost of required insurance and bonds and/or any other similar significant initial expense required for the initiation of the contract work shall be included in this item. The determination of the adequacy of the Contractor's facilities, except as noted above, shall be made by the Contractor.

1.2 MEASUREMENT AND PAYMENT

1.2.1 Payment Item No. 0001 Mobilization

Under this item, the Contractor shall receive a lump sum price bid for mobilization including furnishing and maintenance of services, equipment or facilities, to the extent and at the time the Contractor deems them necessary for operations consistent with the requirements of the work and this contract. The price bid for mobilization shall not exceed 6 percent of the total contract bid price excluding the bid for mobilization.

The lump sum price bid for mobilization shall be payable to the Contractor whenever he shall have completed ten percent of the work of this contract. For the purposes of this item, ten percent of the work shall be considered completed when the total of payments, earned, as reflected by estimates of work done, not including the amount bid for this item, shall exceed ten percent of the total amount of the Contractor's bid for this contract.

PART 2 PRODUCTS

2.1 MATERIALS

Such materials as are required that are not to be a part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent borough, county, state or federal law, regulation or code.

PART 3 EXECUTION

3.1 CONSTRUCTION DETAILS

Such work as is done in providing the facilities and services under this item shall be done in safe and workman-like manner and shall conform with any pertinent borough, county, state or federal law, regulation or code. Good housekeeping consistent with safety shall be maintained.

-- End of Section --

SECTION 01551

SITE CLEARING FOR STAGING AREA

Item 0002 - Site Clearing for Staging Area

PART 1 GENERAL

1.1 SCOPE OF WORK

Under this item the Contractor shall clear and remove all objectionable material such as trees up to and including six inches in caliper, all shrubby growth and brush, vines, stumps of all sizes, and weeds, stones, wood and all trash within the limits shown on the plans, in accordance with these specifications and the direction of the Contracting Officer.

The Contractor shall carefully protect all trees, shrubs and other growth that are to remain and shall also be liable for any and all damages to adjacent property caused by clearing operations. All damaged trees and plants in the staging area shall be replaced or restored to their original condition to the satisfaction of the Contracting Officer.

This item shall be used for clearing of the staging area and the site entrance and access way only. Clearing within the planned biostabilization area shall be paid for under the item "Clearing and Grubbing".

1.2 MEASUREMENT AND PAYMENT

1.2.1 Payment Item No. 0002 Site Clearing for Staging Area

For performing the work SITE CLEARING under this item, in accordance with the plans, specifications and directions of the Contracting Officer, the Contractor shall receive the lump sum price bid.

The price bid shall be a lump sum and shall include the cost of all labor, materials and equipment necessary for clearing all objectionable material within the limits of the contract, and all work incidental thereto, in accordance with the plans and specifications, to the satisfaction of the Contracting Officer.

The lump sum price bid for this item shall not exceed $xx. In the event that a lump sum price of more than $xx is indicated in the bid for this item, the Government will substitute the sum of $xx. and make the necessary adjustment in the lump sum price bid.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 METHOD

Unless otherwise directed, the Contractor shall thoroughly clear and remove all objectionable surface material. Whenever possible, the Contractor shall separate organic debris from soil material.

When directed, objectionable embedded subsurface material, as heretofore

described, shall be removed.

No trees or shrubs shall be removed except as ordered by the Contracting Officer.

All cleared material and all other debris shall be disposed of off-site in accordance with the plans, specifications and direction of the Contracting Officer.

-- End of Section --

SECTION 01525

SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
08/04 NYD Edition for General Construction

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.32	Personal Fall Protection - Safety Requirements for Construction and Demolition Operations
ANSI/ASSE A10.34	(2001) Protection of the Public on or Adjacent to Construction Sites
ANSI Z359.1	(1992; R 1999) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components

ASME INTERNATIONAL (ASME)

ASME B30.22	(2000) Articulating Boom Cranes
ASME B30.3	(1996) Construction Tower Cranes
ASME B30.5	(2000) Mobile and Locomotive Cranes

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2002) Portable Fire Extinguishers
NFPA 241	(2000) Safeguarding Construction, Alteration, and Demolition Operations
NFPA 51B	(2003) Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2002) National Electrical Code
NFPA 70E	(2004) Electrical Safety in the Workplace

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2003) Safety -- Safety and Health Requirements

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.146	Permit-required Confined Spaces

29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES whether or not shown on submittal register:

Government acceptance is required for submittals with a "G, RO" designation.

SD-01 Preconstruction Submittals

Accident Prevention Plan (APP); G, RO

Activity Hazard Analysis (AHA); G, RO

Crane Critical Lift Plan; G, RO

Proof of qualification for Crane Operators; G, RO

SD-06 Test Reports

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Accident Reports

Monthly Exposure Reports

Crane Reports

Regulatory Citations and Violations

SD-07 Certificates

Confined Space Entry Permit

Hot Work Permit

Submit one copy of each permit/certificate attached to each Daily Quality Control Report.

Machinery & Mechanized Equipment Certification Form

1.3 DEFINITIONS

a. Competent Person for Fall Protection. A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as their application and use with related equipment, and has the authority to take prompt

corrective measures to eliminate the hazards of falling.

b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.

c. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

d. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

(1) Death, regardless of the time between the injury and death, or the length of the illness;

(2) Days away from work (any time lost after day of injury/illness onset);

(3) Restricted work;

(4) Transfer to another job;

(5) Medical treatment beyond first aid;

(6) Loss of consciousness; or

(7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

e. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

1.4 SAFETY - GENERAL CONSTRUCTION

General construction includes building construction, roofing, excavations, steel placement, paving,roads, site work, flood control structures, incidental removal of asbestos, lead paint, PCBs, etc. Other sections of the contract documents may also require separate specially qualified individuals in such areas as chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, quality control, etc. The Contractor must comply with all safety requirements in the contract. In addition to plans as required by this section, submit safety plans for other sections as indicated therein.

1.5 REGULATORY REQUIREMENTS

As a minimum, and in addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, OSHA, local military base rules, and any other federal, state, and local, laws, ordinances, criteria, rules and regulations which may apply. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

1.6 SITE QUALIFICATIONS, DUTIES AND MEETINGS

1.6.1 Personnel Qualifications

1.6.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor.

The SSHO shall meet the following requirements:

a. A minimum of 7 years experience with construction safety as a major job duty with at least 3 years of experience on projects of similar complexity and scope.

b. Must have completed 30-hour OSHA construction safety class or equivalent within the last 5 years.

c. Must have completed an average of at least 24 hours of formal safety training each year for the past 3 years with training for competent person status for at least the following 4 areas of competency: Excavation; Scaffolding; Fall protection; Confined space. Additional areas of competence are required if special hazards will be encountered on the project.

d. Must have a minimum of one year's experience or possess competence (via training) in arctic climate construction including the use of personal protective equipment (applies if project located in arctic area).

e. Familiarity with the Corps of Engineers Safety Manual (EM 385-1-1), and any applicable Federal, State, or Local safety requirements.

1.6.1.2 Competent Person for Confined Space Entry

Provide a competent person for confined space meeting the definition and requirements of EM 385-1-1.

1.6.1.3 Crane Operators

Crane operators shall meet the requirements in USACE EM 385-1-1, Section 16 and Appendix G. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacitates of 50,000 pounds or greater, crane operators shall be designated as qualified by a source that qualifies crane operators (i.e., union, a government agency, or and organization that tests and qualifies crane operators). Proof of current qualification shall be provided.

1.6.1.4 Additional Safety Staff

Additional Safety Staff having specialized safety competence shall be provided on a part-time basis during the time the applicable part of construction is ongoing, and as applicable to the project. The additional staff shall have competence in hazardous energy, health hazard recognition, evaluation and control of chemical, physical, and biological agents, CPR/First Aid certification (current), electrical personal protective equipment and clothing, including selection, use, and maintenance, plus any

other special hazards of the project. These individuals must be identified in the Accident Prevention Plan. They may be employees of the Prime Contractor or of subcontractors. Some or all of these competence may be fulfilled by the SSHO if qualified.

1.6.2 Personnel Duties

1.6.2.1 Site Safety and Health Officer (SSHO)/Superintendent

a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.

b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.

c. Maintain applicable safety reference material on the job site.

d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.

e. Implement and enforce accepted APPS and AHAs.

f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board. Coordinate with the QC system manager.

g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.6.3 Meetings

1.6.3.1 Preconstruction Safety Conference

a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, Quality Control System Managers, major subcontractors, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).

b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be

established to preclude project delays.

c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction safety conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

d. The functions of a preconstruction safety conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

1.6.3.2 Safety Meetings

Shall be conducted and documented as required by EM 385-1-1. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractors' daily quality control report.

1.7 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 14 calendar days prior to the date of the preconstruction safety conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall only be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in

order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSE A10.34,) and the environment.

Copies of the accepted plan will be maintained at the resident engineer's office and at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.7.1 EM 385-1-1 Contents

In addition to the requirements outlines in Appendix A of USACE EM 385-1-1, the following is required:

a. Crane Critical Lift Plan. Prepare and sign weight handling critical lift plans for lifts over 75 percent of the capacity of the crane or hoist (or lifts over 50 percent of the capacity of a barge mounted mobile crane's hoists) at any radius of lift; lifts involving more than one crane or hoist; lifts of personnel; and lifts involving non-routine rigging or operation, sensitive equipment, or unusual safety risks. The plan shall be submitted 15 calendar days prior to on-site work and include the requirements of USACE EM 385-1-1, paragraph 16.C.18. and the following:

(1) For lifts of personnel, the plan shall demonstrate compliance with the requirements of 29 CFR 1926.550(g).

(2) For barge mounted mobile cranes, barge stability calculations identifying barge list and trim based on anticipated loading; and load charts based on calculated list and trim. The amount of list and trim shall be within the crane manufacturer's requirements.

b. Occupant Protection Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 13281 LEAD BASED PAINT HAZARD ABATEMENT, TARGET HOUSING & CHILD OCCUPIED FACILITIES and 13283N REMOVAL AND DISPOSAL OF LEAD CONTAINING PAINT.

c. Lead Compliance Plan. The safety and health aspects of lead work, prepared in accordance with Section 13282N LEAD IN CONSTRUCTION.

d. Asbestos Hazard Abatement Plan. The safety and health aspects of asbestos work, prepared in accordance with Section 13280 ASBESTOS ABATEMENT and 13281N ENGINEERING CONTROL OF ASBESTOS CONTAINING MATERIALS.

e. Site Safety and Health Plan. The safety and health aspects prepared in accordance with Section 01351 SAFETY HEALTH AND EMERGENCY RESPONSE (HTRW/UST).

f. PCB Plan. The safety and health aspects of Polychlorinated Biphenyls work, prepared in accordance with Sections 13284 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENALS and 13285 REMOVAL AND DISPOSAL OF PCB CONTAMINATED SOILS.

g. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220 DEMOLITION and referenced sources. Include engineering survey as applicable.

h. Excavation Plan. The safety and health aspects prepared in accordance with Section 02300 EARTHWORK.

1.8 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 5 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

The activity hazard analyses shall be developed for each definable feature of work within the Quality Control system. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

1.9 DISPLAY OF SAFETY INFORMATION

Within 5 calendar days after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, section 01.A.06. Additional items required to be posted as applicable include:

a. Confined space entry permit.

b. Hot work permit.

1.10 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

1.12 REPORTS

1.12.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least $2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Report Form 3394 and provide the report to the Contracting Officer within 3 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

1.12.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than 24 hours, after any accident meeting the definition of Recordable Injuries or

Illnesses or High Visibility Accidents, property damage equal to or greater than $2,000, or any weight handling equipment accident. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

1.12.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

1.12.4 Crane Reports

Submit crane inspection reports required in accordance with USACE EM 385-1-1, Appendix H and as specified herein with Daily Reports of Inspections.

1.12.5 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering an activity under this contract (see Contracting Officer for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the Contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926 and USACE EM 385-1-1 section 16 and Appendix H. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. The Contractor shall also certify that all of its crane operators working on the DOD activity have been trained in the proper use of all safety devices (e.g., anti-two block devices). These certifications shall be posted on the crane.

1.13 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the Fire Division of the military base or the municipality where the work is being performed. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION IMMEDIATELY.

Obtain services from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems, welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, vaults, etc.) that have the potential for flammable or explosive atmospheres.

PART 2 PRODUCTS

2.1 CONFINED SPACE SIGNAGE

The Contractor shall provide permanent signs integral to or securely attached to access covers for new permit-required confined spaces. Signs wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE - DO NOT ENTER -" in bold letters a minimum of 25 mm (one inch) in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m (5 feet).

2.2 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, installed under the supervision of a qualified person in fall protection, shall be left in place for continued customer use and so identified by signage stating the capacity of the anchorage (strength and number of persons who may be tied-off to it at any one time).

PART 3 EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard shall prevail.

3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If [additional] material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions." The Contractor is required to execute this modification.

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

3.3.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

3.3.2 Fall Protection Equipment and Systems

The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.H. and 05.I. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ANSI A10.32.

3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated

for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

3.3.3 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1. Exiting horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

3.3.4 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

3.3.5 Guardrails and Safety Nets

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

3.3.6 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Access to scaffold platforms greater than 6 m (20 feet) in height shall be accessed by use of a scaffold stair system. Vertical ladders commonly provided by scaffold system manufacturers shall not be used for accessing scaffold platforms greater than 6 m (20 feet) in height. The use of an adequate gate is required. Contractor shall ensure that employees are qualified to perform scaffold erection and dismantling. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection and prevention plan. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Side brackets used to extend scaffold platforms on self-supported scaffold

systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base. Work platforms shall be placed on mud sills. Scaffold or work platform erectors shall have fall protection during the erection and dismantling of scaffolding or work platforms that are more than six feet. Delineate fall protection requirements when working above six feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

3.4.1 Stilts

The use of stilts for gaining additional height in construction, renovation, repair or maintenance work is prohibited.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

3.5.2 Weight Handling Equipment

a. Cranes and derricks shall be equipped as specified in EM 385-1-1, section 16.

b. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

c. The Contractor shall comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, and ASME B30.8 for floating cranes and floating derricks.

d. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

e. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

f. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.

g. All employees shall be kept clear of loads about to be lifted and of suspended loads.

h. The Contractor shall use cribbing when performing lifts on outriggers.

i. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

j. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.

k. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Contracting Officer personnel.

l. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Contracting Officer personnel.

m. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

3.6 EXCAVATIONS

The competent person shall perform soil classification in accordance with 29 CFR 1926.

3.6.1 Utility Locations

Prior to digging, the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.

3.6.2 Utility Location Verification

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.061 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

3.6.3 Shoring Systems

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

3.6.4 Trenching Machinery

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

3.7 UTILITIES WITHIN CONCRETE SLABS

Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems shall be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

3.8 ELECTRICAL

3.8.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

3.8.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

-- End of Section --

SECTION 01570

WORK SITE ACCESS ROAD AND STAGING AREA

Item No. 0004 - Work Site Access Road and Staging Area

PART 1 GENERAL

1.1 SCOPE OF WORK

Under this section, the Contractor shall create a work site access road and temporary staging area for construction access and staging. The work site access road and staging area shall be located as shown on the plans.

The Contractor shall carefully protect all preserved areas as shown on the plans, and shall also be liable for any and all damages to property caused by the work under this section. Any damages to property or to vegetation within preserved areas shall be restored to the original conditions to the satisfaction of the Contracting Officer.

1.2 MEASUREMENT AND PAYMENT

1.2.1 Payment Item No. 0004 Work Site Access Road and Staging Area

This item shall be measured by the square yard of aggregate for site access used to construct the work site access road and staging area in accordance with the plans and specifications, and as directed by the Contracting Officer.

The price bid shall be an unit price per square yard of aggregate for site access used to construct the work site access road and staging area including grading fabric (including , compacting, excavation, filling, fill materials, aggregate, filter fabric (including repairs if necessary), and removal of vegetation that may be necessary to complete the work to the satisfaction of the Contracting Officer. The price bid shall also include the cost of restoring disturbed vegetation after completion of the project.

Payment for the installation, maintenance, and removal of silt fence materials shall be made under Section 02234 SILT FENCE.

PART 2 PRODUCTS

2.1 MATERIALS

Aggregate for site access shall conform to the materials requirements described in Section 02371 AGGREGATE SURFACE COURSE.

Filter fabric-separation shall conform to the materials requirements described in Section 02379 FILTER FABRIC.

Silt fence shall conform to the materials requirements described in Section 02234 SILT FENCE.

Chain link security fence shall conform to the materials requirements described in Section 02821 FENCING.

Gates shall conform to the materials requirements described in Section 02821 FENCING.

PART 3 EXECUTION

3.1 METHOD

Prior to construction of the work site access road and staging area, the Contractor shall install the anti-locking pad, silt fence, and construction fence in accordance with the plans and specifications.

The work site access road shall be a minimum of 15 feet in width.

Subsequence to pad, fence, and gate installation, the Contractor shall excavate and/or fill the footprint area of the work site access road and staging area to create a level surface that is 12 inches deeper than the grade shown on the plans. Filter fabric-separation shall be installed along the footprint of these areas as shown on the plans. Aggregate for site access shall then be placed on top of the fabric at the depth of 12 inches and graded to create a flat surface.

All materials used to create the work site access road and staging area shall be removed and disposed of off-site in accordance with the plans and to the satisfaction of the Contracting Officer. If necessary, fill shall be placed and graded within the footprint area of the staging area to blend in with the surrounding grades.

Any vegetation within preserved areas damaged by the work under section, as determined by the Contracting Officer, shall be replaced immediately after the completion of the work at no additional cost to the Government.

-- End of Section --

SECTION 02230

CLEARING AND GRUBBING

Item No. 0005 - Site Clearing
Item No. 0006 - Allowance for Trash Disposal Fees

PART 1 GENERAL

1.1 SCOPE OF WORK

The Contractor shall clear and remove:

a. All objectionable material including tree, shrubs, brush, vines, wrack, stumps of all sizes, weeds, stones, boulders, tires, and trash

b. The top 6 inches of loose surface litter, organic litter, consolidated material, leaf litter, and other organic debris. This material shall be removed from within the limits of the clearing area, in accordance with the plans and specifications, and the direction of the Contracting Officer and properly disposed of at an approved off-site locations.

At no time shall the Contractor dispose of any debris, soil or other material that may or does contain Phragmites australis rhyzome. The limits of the clearing and grubbing are shown on the plans.

The Contractor shall carefully protect all preserved areas as shown on the plans, and shall also be liable for any and all damages to property caused by the work under this section. Any damages to property or to vegetation within preserved areas shall be restored to the original conditions to the satisfaction of the Contracting Officer at the Contractor's expense.

All organic material, tires, and trash cleared under this section shall be disposed of, prior to excavation activities, at an appropriate off-site facility to be approved by the Contracting Officer.

1.2 MEASUREMENT AND PAYMENT

1.2.1 Payment Item No. 0005 Site Clearing

For performing the work under this item, in accordance with the plans, specifications and directions of the Contracting Officer, the Contractor shall receive a lump sum payment. The lump sum price bid shall include the cost of all labor, materials, and equipment necessary for clearing all objectionable material from within the clearing area as shown on the plans, and all work incidental thereto, in accordance with the plans and specifications and to the satisfaction of the Contracting Officer. The lump sum price shall also include: the disposal of organic materials at an off-site facility; and any fees associated with acquiring permits.

Payment for clearing the work site access road and staging area (as shown on the plans) is indicated in Section 01550 SITE CLEARING FOR STAGING AREA and Section 01570 WORK SITE ACCESS ROAD AND STAGING AREA.

The lump sum price bid for this item shall include the removal and hauling of tires under this section. Similarly, the lump sum price bid for this

item shall include the removal and hauling of trash cleared under this section; however, disposal of trash cleared under this contract shall be paid for separately under Payment Item No. 0006 Allowance for Trash Disposal Fees.

1.2.2 Payment Item No. 0006 Allowance for Trash Disposal Fees

The Contractor shall be responsible for up front payment of all costs associated with disposal of trash under this contract. The Government will reimburse the Contractor for these costs based on submitted copies of load tickets and paid invoices for trash disposal. Payment for this item will not exceed $xx.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Tree Paint; G, RO

Submit product information 30 days prior to starting work.

PART 2 PRODUCTS

2.1 TREE WOUND PAINT

Bituminous based paint of standard manufacture specially formulated for tree wounds.

2.2 HERBICIDE

Herbicide will not be used for clearing and grubbing.

PART 3 EXECUTION

3.1 DELIVERY, STORAGE, AND HANDLING

Materials shall be delivered in the original, unopened containers bearing the manufacturer's chemical analysis, and store at the site in accordance with the manufacturer's instructions and the Vermont Depart of Environmental Conservation regulations.

3.2 METHOD

The Contractor shall perform work as indicated under this section prior to beginning work on excavation covered under other sections as directed by the Contracting Officer.

3.3 CLEARING

Clearing shall consisting of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Clearing shall also include the removal and disposal of structures that obtrude, encroach upon,

or otherwise obstruct the work. Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing within the cleared areas shall be trimmed of dead branch 1-1/2 inches or more in diameter and shall be trimmed of all branches the heights indicated or directed. In addition any such trees shall be protected from damage potentially caused by construction activities. Every effort shall be made to avoid excessive damage to the roots of trees to be left standing. Limbs and branches to be trimmed shall be neatly cut close to the boles of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint.

3.4 TREE REMOVAL

Where indicated or directed, trees and stumps that are designated as trees shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph GRUBBING. Trees shall be disposed of as specified in paragraph DISPOSAL OF MATERIALS.

3.5 PRUNING

The Contractor shall prune trees designated to be left standing within the cleared areas of dead branches 1-1/2 inches or more in diameter; and trim branches to heights and in a manner as indicated. Neatly cut limbs and branches to be trimmed closed to the bole of the tree or main branches. Paint cuts more than 1-1/4 inches in diameter with an approved tree wound paint.

3.6 GRUBBING

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas.

Material to be grubbed, together with logs and other organic or metallic debris not suitable for as sub-grade or planting medium purposes, shall be removed to a depth of not less than 6 inches below the original surface level of the ground and/or finish grades in areas indicated to be grubbed and in areas indicated as construction areas under this contract. Depressions made by grubbing shall be filled with suitable material and compacted to make the surface conform with the original adjacent surface of the ground.

3.7 DISPOSAL OF MATERIALS

Logs, stumps, roots, brush, rotten wood, and other refuse from the clearing and grubbing operations shall be disposed of at the appropriate off-site facilities, except when otherwise directed by the Contracting Officer or the Project Biologist. Such directive will state the conditions covering the disposal of such products and will also state the areas in which they may be placed.

3.8 PROTECTION

3.8.1 Roads and Walks

The Contractor shall keep roads and walks free of dirt and debris at all

times. This includes any of the roads or walkways in Little river State Park.

3.8.2 Trees, Shrubs, and Existing Facilities

Trees, shrubs, and existing facilities shall be protected in accordance with Section 01552 TEMPORARY FACILITIES AND CONTROLS. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require.

3.8.3 Utility Lines

The Contractor shall protect existing utility lines that are indicated to remain from damage. The Contractor shall notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations. When utility lines which are to be removed are encountered within the area of operations, the Contractor shall notify the Contracting Officer in ample time to minimize interruption of the service. Refer to Section 01552 TEMPORARY FACILITIES AND CONTROLS for additional utility protection..

-- End of Section --

SECTION 02232

SURVEYING

PART 1 GENERAL

1.1 SCOPE OF WORK

Under this item, the Contractor shall employ the services of a Vermont State licensed land surveyor to compile original and final cross-sections, appropriate contour elevations and volume computations for earthwork within the project area.

The Contractor shall be responsible for all necessary surveying required to construct all elements of the project as shown on the contract drawings and specified herein using the control points and data furnished. The Contractor will also provide additional horizontal and vertical control points along the project area as required for construction or as directed by the Contracting Officer.

Prior to starting work the Contractor shall establish control within the site and confirm the site limits of disturbance as indicated on contract drawings.

The Contractor's Land Surveyor shall be responsible for the purpose of a final stakeout, which shall serve to establish elevation criteria for the various planting zones as indicated on contract drawings.

Upon completion of the work, an as-built survey shall be provided. The as-built survey shall be signed and sealed by the Contractor's Land Surveyor, licensed to practice in the State of Vermont.

All project installations improperly constructed as a result of inadequate or erroneous survey layout shall be properly relocated by the Contractor at no additional to the Government.

1.2 PURPOSE

To quantify and certify the volume and elevations of earthwork associated with the project, and to ensure that final elevations at project completion are as shown on the contract drawings.

1.3 APPROVAL OF SURVEYOR

Any Vermont State licensed land surveyor may be submitted for approval. Approval must be received from the Contracting Officer prior to commencing any survey work.

The Contractor shall submit to the Contracting Officer for approval, the name and copy of current Vermont State registration certificate for the proposed land surveyor.

1.4 SUBMITTALS

The Contractor shall furnish the Contracting Officer with the following:

a. Prior to actual field operation by Contractor: Create a base line with appropriate ties within the project site for the purpose of running cross-sections for volume computation. Run original grades on a fifty-foot grid unless otherwise directed by the Contracting Officer. Also note all significant intermediate grade changes. Provide Contracting Officer with two copies of a map at 1"=20'-0" scale showing original grades, base line with ties, and description and elevation of benchmark used.

b. After completion of all earthwork: Take final sections along the same grid and generate profiles of original grade and final grade plotted at 1"=2'-0" vertical and 1"=20'-0" horizontal. Compute end areas and note data adjacent to each section on cross-section paper in ink. Provide notes where applicable.

c. Perform column computations for cut and fill using average end area method. Provide total quantity of cut and fill. All pertinent calculation sheets shall be submitted with column computations. Submit copies of all field notes.

d. Drawings/Final Submittal: Submit one original and two mylar prints showing original and final grades on the project grid. The original drawing shall conform to all aspects of the specifications of the Contracting Officer's office. All drawings must be signed and sealed by the approved licensed land surveyor.

1.5 DATUM

Vertical datum shall conform to contract topographic survey datum (NAVD 88).

1.6 MEASUREMENT AND PAYMENT

1.6.1 Payment Item No. 0008 Surveying

For providing the services of a licensed land surveyor, the Contractor shall receive a lump sum price bid.

Partial payments shall be made as follows:

- Upon submission and approval of the work completed as indicated in paragraph 1.4.a above, the Contractor will receive twenty percent of the lump sum bid.

- Upon submission and approval of the work completed as indicated in paragraphs 1.4.b and 1.4.c above, the Contractor will receive sixty percent of the lump sum bid.

- Upon submission and approval of the work completed as indicated in paragraph 1.4.d above, the Contractor will receive the final twenty percent of the lump sum bid.

All work must meet the approval of the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS

The Contractor's land surveyor shall provide all instruments, equipment, stakes, marking paints and other materials necessary to perform the work

satisfactorily.

PART 3 EXECUTION

3.1 GENERAL

Qualified personnel and adequate equipment shall be made available by the Contractor to maintain control points and layout all lines and grades throughout the duration of the contract.

The exact position of all work points shall be established from control points, base line transit points and/or other points of similar nature.

The Contractor's land surveyor shall clearly identify bench marks and record existing elevations. Locate datum level used to establish bench mark elevations sufficiently distant so as not to be affected by movement resulting from excavation operations.

The Contractor's land surveyor shall establish, check on a weekly basis, re-establish when necessary and maintain control points throughout the life of the contract to permit the Contracting Officer to make the necessary preliminary, interim and final measurements and to check the Contractor's layout.

The Contractor shall be responsible for the preservation of all control points. If control points are damaged, lost or moved, they shall be reset at no additional cost to the Government. Control points outside as well as inside the contract limits shall be used for construction.

Should bench mark readings indicate displacement, the Contractor shall halt operations until corrective action has been provided and is acceptable to the Government.

The Contractor shall provide the maintain offset stakes for each base line, at each station, and out of the limits of grading and construction. Each stake shall be identified and marked to show the offset distance from the base line and the Contractor shall furnish sheets showing cuts and fills to the finished profile and cross section lines.

Any error, apparent discrepancy or absence of data shown or required for accurately accomplishing the survey work shall be referred to the Contracting Officer within 24 hours of discovery for interpretation or furnishing when such is observed or required.

The Contracting Officer may check all or any portion of the survey work or notes made by the Contractor. Any necessary correction to the work shall be made immediately by the Contractor. Such verification by the Contracting Officer shall not relieve the Contractor of any responsibilities for the accuracy and completeness of his work.

The Contractor shall keep a survey transit and level with tripod and survey rod on the project site at all times to be used for checking inverts, surveyors stakes, etc.

The Contractor shall submit all survey data for daily checks, to the Contracting Officer within 24 hours after the data is obtained.

The Contractor shall submit cut sheets for the Contracting Officer's approval prior to any construction activity for the purpose of verifying

the construction layout. Cut sheets for any particular item of work shall be submitted at least 48 hours prior to the need for approval.

3.2 SURVEY ERRORS

All project installation improperly constructed or located as a result of inadequate or erroneous survey layout shall be relocated or reconstructed, after demolition and/or removal of the improper work as necessary, by the Contractor at no charge to the Government.

3.3 CONFIRM OF WORK LIMITS

Prior to commencing work the Contractor shall establish survey control adjustment to and within the site. For this purpose his surveyor shall use know features and any available area existing survey control.

Once survey control is established, the Contractor's surveyor shall stake out the site limits of disturbance, including confirmation of the limit of wetlands and limits of fill. The Contractor shall submit a plan showing this stakeout work to the Contracting Officer for review and approval.

3.4 FINAL STAKEOUT

On completion of all earthwork operations the Contractor shall stakeout a 50 by 50 foot grid with the actual as-built elevation of the ground where the stake has been placed and marked.

The survey grid of stakes must be maintained until the final as-built topo-survey is approved by the Contracting Officer.

All planting zone stakes (1"x1"x3" wooden lath) shall remain, unless otherwise directed by the Contracting Officer.

3.5 TOLERANCES

The Contractor shall establish final grades in the planned biostabilized slope in conformance with the prescribed grades, cross-sections, and dimensions shown contracting drawings.

Note that the grades below 590 in Areas 2, 4, 6 and 8 shown on the drawings are approximate. Final grades shall be determined on the basis that all site cut operations are to be balanced by filling, with the exception of debris which shall be disposed of off-site.

All final grades above Elevation 600 shall be within 2.0 feet of the grades shown on the drawing. Elevations below Elevation 600 are to be constructed to a 0.2 foot tolerance, and the toe stabilization to a 0.1 foot tolerance.

3.6 AS-BUILT SURVEY

At completion of the work, but prior to the Government's acceptance of the work, the Contractor shall prepare an as-built topographic survey and 30"x42" mylar drawing at a 1"=30' scale with 1-foot contour intervals. The drawing shall show all as-built features and installations and shall bear the signature and seal of the Contractor's licensed land surveyor. The drawing shall be submitted to the Contracting Officer for review and approval. The drawing shall indicate the Contractor's name, the dates of construction, the United States Army Corps of Engineers as permittee, the permit number and and local government's signature block. After approval

by the Contracting Officer, the Contractor shall submit one mylar, five prints, and a CD disc copy (Microstation compatible format) of the final drawings.

-- End of Section --

SECTION 02233

EARTHWORK

Item No. 0009 - Unclassified Excavation

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 136	(2001) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 422	(1963; R 2002) Particle-Size Analysis of Soils
ASTM D 1140	(2000) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4318	(2000) Liquid Limit, Plastic Limit, and Plasticity Index of Soils

1.2 SCOPE OF WORK

Under this item the Contract shall perform excavation and fill activities, not included under other sections, required for grading the site to the proposed grades. Excavated and fill materials shall be placed and compacted, in accordance with the plans, specifications, and directions of the Contracting Officer.

The Contractor shall carefully protect all preserved areas as shown on the plans, and shall also be liable for any and all damages to property caused by the work under this section. Any damages to property or to vegetation within preserved areas shall be restored to the original conditions to the satisfaction of the Contracting Officer.

1.3 MEASUREMENT AND PAYMENT

Payment for installation, maintenance, and removal of silt fence, shall be made under Payment Item No. 0011, which is described in Section 02320 SILT FENCE.

1.3.1 Payment Item No. 0009 Unclassified Excavation

The unit of measurement for excavation shall be the cubic yard of soil excavated to meet the proposed grades in areas of cut as shown on the plans. The measurements will not include the volume of subgrade material or other material that is scarified or plowed and reused in-place, any volume excavated without authorization or the volume of any material used for purposes other than directed, and any excavation performed prior to checking the elevations of the existing grades.

The excavation volume shall be computed by the average end area method from cross-sections taken before and after the excavation operations, when the material is acceptably utilized or disposed of as herein specified.

This item shall be paid for at the contract unit price per cubic yard for unclassified excavation. The unit price shall include all labor, equipment, tools, supplies, and incidental expenses necessary for rough grading; excavation, disposal, delivery, and placement of excavated material; any necessary pumping, sheeting, and/or bracing; and other incidental work and expenses necessary to complete the work under this item. The price bid shall also include excavation, hauling, spreading, and related miscellaneous operations.

No direct payment will be made for re-handling of excavated materials for any other purposes necessary to complete the work as shown on the plans. The compensation will be considered as having been included in the price bid for unclassified excavation. Re-handling of excavated materials may be paid for as excavation when the same is made necessary by changes of plans and is ordered in writing by the Contracting Officer.

For computation of quantities of excavation, no deductions shall be made in the areas of any cross section for any pipe or similar obstruction unless the area of such obstruction is greater than one square foot. Unless otherwise specified, all excavation payment lines shall be produced from neat lines. Volume calculations shall be from maps as produced by a licensed surveyor, to be paid for under the item "Services of a Licensed Land Surveyor" under Section 02232 SURVEYING.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Certificates

Testing Laboratory Qualifications; G, RO

Submit qualifications of the commercial testing laboratory or Contractor's testing facilities when test reports are submitted.

1.5 SUBSURFACE DATA

The subsurface investigation report and soil boring logs are located in the attached reference document Final Geotechnical, Sediment Yield & Hydraulic Analysis, September 2003. This data represents the best subsurface information available; however, variations may exist in the subsurface

between boring locations.

1.6 CRITERIA FOR BIDDING

The Contractor shall base bid this section on the following criteria:

a. Surface elevations as indicated on the plans.

b. Material character as indicated in the boring logs.

PART 2 PRODUCTS

2.1 MATERIAL REQUIREMENTS

Materials for the road shall be gravel.

PART 3 EXECUTION

3.1 ROUGH GRADING

After the completion of the work under Section 02230 CLEARING AND GRUBBING for the area of the project site shown as "Clearing Area" on the plans, the existing surface shall be rough graded. Rough grading shall consist of the filling of depressions with existing soils from within the Clearing Area to create a smooth well-graded surface that does not impound water.

3.2 EXCAVATION

Any excavation or other construction activities shall not commence until all soil erosion and sediment control measures, and construction fence has been installed.

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations as specified on the plans. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. The Contractor shall maintain excavations and fills free from detrimental quantities of leaves, brush, sticks, trash, and other debris until final acceptance of the work. Grading shall be in conformity with the typical sections shown and tolerances specified in paragraph FINISHING.

Any vegetation within preserved areas damaged by the work under this section, as determined by the Contracting Officer, shall be replaced immediately after the completion of the work, at no additional cost to the Government.

3.2.1 Drainage

Material shall not be dewatered on site. Excavated material shall be stockpiled as specified in paragraph STOCKPILE and allowed to dry before hauling to the disposal area. Any wet material shall be carted in a watertight truck bed.

The Contractor shall provide for the collection and disposal of surface and subsurface water encountered during construction. The Contractor shall drain the upland areas during periods of construction to keep soil materials sufficiently dry. When unsuitable working platforms for equipment operation and unsuitable soil support for subsequent construction

features develop, the Contractor shall utilize the necessary measures to permit construction to proceed. It is the responsibility of the Contractor to assess the soil and groundwater conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed.

Any materials used to support construction features that are not suitable to remain at the project site shall be removed at the completion of construction as directed by the Contracting Officer.

3.2.2 Dewatering

Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. Control measures shall be taken by the time the excavation reaches the water level in order to maintain the integrity of the situ material. While the excavation is open, the water level shall be maintained continuously, at least 1 foot below the working level.

3.2.3 Utilities

It is the Contractor's responsibility to detect and protect existing utilities (to remain) from damage during construction. Between 2 and 10 working days prior to start of construction, not including the day of the call, the Contractor is required to notify the local utility companies.

Movement of construction machinery and equipment over pipes and utilities during construction shall be at the Contractor's risk. If a utility is inadvertently damaged, it shall be the Contractor's responsibility to restore that utility to operating condition, equal to that existing prior to damage, at no cost to the Government. The Contractor shall remain at the site with the damaged utility until it has been restored and there is no danger to the public (i.e., exposed live wires, etc.). Should the Contractor need to cut off utilities or services during the performance of the work, he shall notify and request the utility company owning or controlling the services to cut off these services. Any services cut off or interrupted by the Contractor's operations shall be restored at the Contractor's expense.

Any work adjacent to non-Government utilities shall be performed as indicated in accordance with procedures outlined by the utility company.

For work immediately adjacent to or for excavations exposing a utility or other buried obstruction, excavation shall be done by hand. Hand excavation shall be started on each side of the indicated obstruction and continue until the obstruction is uncovered or until clearance for the new grade is assured. Uncovered lines or other existing work affected by the contract excavation shall be supported until approval for backfill is granted by the Contracting Officer. Damage to utility lines or subsurface construction shall be reported immediately to he Contracting Officer.

3.2.4 Existing Camp Structures

There are numerous campsite shelters and utility hook-ups located within the limits of excavation. It is the Contractor's responsibility to protect these structures from damage during construction. If an existing camp structure is inadvertently damaged, it shall be the Contractor's responsibility to restore that structure to operating condition, equal to

that existing prior to damage.

For work immediately adjacent to the existing camp structures, excavation shall be done by hand. Hand excavation shall be started on each side of the structure and continue until it is uncovered or until clearance for the new grade is assured. Existing camp structures affected by the contract excavation shall be supported until approval for backfill is granted by the Contracting Officer. Damage to existing camp structures shall be reported immediately to the Contracting Officer.

3.3 STOCKPILE

Stockpile shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be cleared, grubbed, and sealed by rubber-tired equipment. Stockpiles shall be surrounded with silt fence for soil erosion and sediment control. Silt fence shall be installed in accordance with Section 02320 SILT FENCE.

3.4 FINISHING

The surface of excavations embankments, and subgrade shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown in the plans. The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations shown in the plans.

3.5 TESTING

Testing shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. When test reports are submitted, the Contractor shall submit the qualifications of the testing laboratory for either a commercial testing laboratory or the Contractor's testing facilities. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer.

-- End of Section --

SECTION 02370

SOIL SURFACE EROSION CONTROL

08/04

PART 1 GENERAL :Item No. 0003 - Soil Erosion and Sediment Control

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D 1248	(2004) Polyethylene Plastics Extrusion Materials for Wire and Cable
ASTM D 1560	(1992; R 2000) Resistance to Deformation and Cohesion of Bituminous Mixtures by Means of Hveem Apparatus
ASTM D 1682	(1959T; R 1975) Test for Breaking Load and Elongation of Textile Fabrics
ASTM D 1777	(1996; R 2002) Thickness of Textile Materials
ASTM D 2844	(2001e1) Resistance R-Value and Expansion Pressure of Compacted Soils
ASTM D 3776	(1996; R 2002) Mass Per Unit Area (Weight) of Fabric
ASTM D 3787	(2001) Bursting Strength of Textiles - Constant-Rate-of-Traverse (CRT), Ball Burst Test
ASTM D 3884	(2001e1) Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)
ASTM D 4355	(2002) Deterioration of Geotextiles from Exposure to Light, Moisture and Heat in a Xenon-Arc Type Apparatus
ASTM D 4491	(1999a) Water Permeability of Geotextiles by Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4972	(2001) pH of Soils
ASTM D 5035	(1995; R 2003) Breaking Force and Elongation of Textile Fabrics (Strip

Method)

ASTM D 5268 (2002) Topsoil Used for Landscaping Purposes

ASTM D 648 (2004) Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act (1940; R 1988; R 1998) Federal Seed Act

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Geosynthetic Binders; G, RO
Hydraulic Mulch; G, RO
Geotextile Fabrics; G, RO

Manufacturer's literature including physical characteristics, application and installation instructions.

Equipment; G, RO

A listing of equipment to be used for the application of erosion control materials.

Finished Grade; G, RO
Erosion Control Blankets; G, RO

Condition of finish grade status prior to installation; location of underground utilities and facilities.

SD-04 Samples

Materials; G, RO

a. Geosynthetic and synthetic binding material; 1 quart.

b. Standard mulch; 2 pounds.

c. Hydraulic mulch; 2 pounds.

d. Erosion control blankets; 6 inch square.

SD-06 Test Reports

Hydraulic Mulch; G, RO
Erosion Control Blankets; G, RO

Certified reports of inspections and laboratory tests, prepared

by an independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-07 Certificates

Hydraulic Mulch; G, RO

Prior to delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following.

For items listed in this section:

a. Certification of recycled content or,

b. Statement of recycled content.

c. Certification of origin including the name, address and telephone number of manufacturer.

Synthetic Soil Binders; G, RO

Certification for binders showing EPA registered uses, toxicity levels, and application hazards.

Erosion Control Plan; G, RO
Construction Work Sequence Schedule; G, RO

Erosion control plan. Construction sequence schedule.

Installer's Qualification; G, RO

The installer's company name and address; training and experience and or certification.

Seed; G, RO

Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.

Tackifier; G, RO

Composition.

Wood By-Products; G, RO

Composition, source, and particle size. Products shall be free from toxic chemicals or hazardous material.

Wood Cellulose Fiber; G, RO

Certification stating that wood components were obtained from managed forests.

SD-10 Operation and Maintenance Data

Maintenance Instructions; G, RO

Instruction for year-round care of installed material. The Contractor shall include manufacturer supplied spare parts.

1.3 MEASUREMENT AND PAYMENT

1.3.1 Standard and Geosynthetic Binder

The standard binder shall be measured by the square yard of surface area covered. No measurement for payment shall be made for fine grading, trenching or other miscellaneous materials necessary for placement of the binder.

1.3.2 Mulch

Mulch shall be measured by the square yard of surface area covered. No measurement for payment shall be made for binder, dye or other miscellaneous materials or equipment necessary for placement of the mulch.

1.3.3 Hydraulic Mulch

Hydraulic mulch shall be measured by the square yard of surface area covered. Measurement for payment shall include binder, dye or both. No measurement for payment shall be made for other miscellaneous materials or equipment necessary for placement of the hydraulic mulch.

1.3.4 Erosion Control Blankets

The erosion control blankets shall be measured by the square yard of surface area covered. No measurement for payment shall be made for fine grading, trenching or other miscellaneous materials necessary for placement of the erosion control blankets.

1.4 DESCRIPTION OF WORK

The work shall consist of furnishing and installing soil surface erosion control materials, including fine grading, blanketing, stapling, mulching and miscellaneous related work, within project limits and in areas outside the project limits where the soil surface is disturbed from work under this contract at the designated locations. This work shall include all necessary materials, labor, supervision and equipment for installation of a complete system. This section shall be coordinated with the requirements of Section 02300 EARTHWORK and Section 02921 SEEDING.

1.5 DELIVERY, INSPECTION, STORAGE, AND HANDLING

Materials shall be stored in designated areas and as recommended by the manufacturer protected from the elements, direct exposure, and damage. Containers shall not be dropped from trucks. Material shall be free of defects that would void required performance or warranty. Synthetic soil binders shall be delivered in the manufacturer's original sealed containers and stored in a secure area.

a. Erosion control blankets shall be furnished in rolls with suitable wrapping to protect against moisture and extended ultraviolet exposure prior to placement. Erosion control blanket shall be labeled to provide identification sufficient for inventory and

quality control purposes.

b. Seed shall be inspected upon arrival at the jobsite for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected.

1.6 SUBSTITUTIONS

Substitutions will not be allowed without written request and approval from the Contracting Officer.

1.7 WARRANTY

Erosion control material shall have a warranty for use and durable condition for project specific installations. Temporary erosion control materials shall carry a minimum eighteen month warranty. Permanent erosion control materials shall carry a minimum three year warranty.

PART 2 PRODUCTS

2.1 BINDERS

2.1.1 Synthetic Soil Binders

Calcium chloride, or other standard manufacturer's spray on adhesives designed for dust suppression.

2.2 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region..

2.2.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.2.2 Hay

Hay shall not be used.

2.2.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: a minimum 9 to a maximum 15 percent moisture, and between a minimum 4.5 to a maximum 6.0 pH.

2.2.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

2.2.5 Shredded Bark

Locally shredded material shall be treated to retard the growth of mold and fungi.

2.2.6 Wood By-Products

Wood locally chipped or ground bark shall be treated to retard the growth of mold and fungi. Gradation: A maximum 2 inch wide by 4 inch long.

2.2.7 Coir

Coir shall be manufactured from 100 percent coconut fiber cured in fresh water for a minimum of 6 months.

2.2.8 Asphalt Adhesive

Asphalt adhesive shall not be used.

2.2.9 Mulch Control Netting

Mulch control netting may be constructed of lightweight recycled plastic, cotton, or paper or organic fiber. The recycled plastic shall be a woven or nonwoven polypropylene, nylon, or polyester containing stabilizers and/or inhibitors to make the fabric resistant to deterioration from UV, and with the following properties:

a. Minimum grab tensile strength (TF 25 #1/ASTM D 4632), 180 pounds.

b. Minimum Puncture (TF 25 #4/ASTM D 3787), 75 psi in the weakest direction.

c. Apparent opening sieve size of a minimum 40 and maximum 80 (U.S. Sieve Size)..

d. Minimum Trapezoidal tear strength (TF 25 #2/ASTM D 4533), 50 pounds.

2.2.10 Hydraulic Mulch

Hydraulic mulch shall be made of 100 percent virgin aspen wood fibers. Wood shall be naturally air-dried to a moisture content of 10.0 percent, plus or minus 3.0 percent. A minimum of 50 percent of the fibers shall be equal to or greater than 0.15 inch in length and a minimum of 75 percent of the fibers shall be retained on a 28 mesh screen. No reprocessed paper fibers shall be included in the hydraulic mulch. Hydraulic mulch shall have the following mixture characteristics:

CHARACTERISTIC (typical)	VALUE
pH	5.4 $\pm$ 0.1
Organic Matter (oven dried basis),	percent 99.3 within $\pm$ 0.2
Inorganic Ash (oven dried basis),	percent 0.7 within $\pm$ 0.2
Water Holding Capacity,	percent 1,401

2.2.11 Tackifier

Tackifier shall be a blended polyacrylimide material with non-ionic galactomannan of Gramineae endosperm in powder and crystalline form with molecular weights over 250,000. Tackifier shall be pre-packaged in the hydraulic mulch at the rate of wood fiber recommended by the manufacturer.

2.2.12 Dye

Dye shall be a water-activated, green color. Dye shall be pre-packaged in

water dissolvable packets in the hydraulic mulch.

2.3 EROSION CONTROL BLANKETS

2.3.1 Erosion Control Blankets Type III

Type III blankets shall be used for erosion control and vegetation establishment on roadside embankments, abutments, berms, shoulders, and median swales where natural vegetation will provide long term stabilization. Erosion control blanket shall be a machine-produced mat consisting of 70 percent straw and 30 percent coconut fiber. The blanket shall be of consistent thickness with the straw and coconut fiber evenly distributed over the entire area of the mat. The blanket shall be covered on the top side with heavyweight photodegradable polypropylene netting having UV additives to delay breakdown and an approximate 5/8 by 5/8 inch mesh, and on the bottom side with a lightweight photodegradable polypropylene netting with an approximate 1/2 inch by 1/2 inch mesh. The blanket shall be sewn together on 1.5 inch centers with degradable thread. The erosion control blanket shall have the following properties:

Material Content	
Straw	70 percent by approximately .35 lb/yd2.
Coconut Fiber	30 percent by approximately .15 lb/yd2 weight.
Netting	Top side heavyweight photodegradable with UV additives and approximately 3 lb/1,000 ft2 weight Bottom side lightweight photodegradable with approximately 1.64 lb/1,000 ft2 weight.

NOTE: Photodegradable life a minimum of 10 months with a minimum 90 percent light penetration. Apply to slopes with a gradient less than 1.5:1.

2.3.2 Seed

2.3.2.1 Seed Classification

State-approved seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws. The Contractor shall submit the Seed Establishment Period information as specified in the Submittals paragraph.

2.3.2.2 Permanent Seed Species and Mixtures

Permanent seed species, mixtures and weightshall be applied as specified in in SECTION 02921A SEEDING.

2.3.2.3 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.3.3 Staking

Stakes shall be 100 percent biodegradable manufactured from recycled plastic or wood and shall be designed to safely and effectively secure erosion control blankets for temporary or permanent applications. The biodegradable stake shall be fully degradable by biological activity within a reasonable time frame. The bio-plastic resin used in production of the biodegradable stake shall consist of polylactide, a natural, completely biodegradable substance derived from renewable agricultural resources. The biodegradable stake must exhibit ample rigidity to enable being driven into hard ground, with sufficient flexibility to resist shattering. The biodegradable stake shall have serrations on the leg to increase resistance to pull-out from the soil. The biodegradable stake shall have the following dimensions: Leg Length of 6.00 inches, Head Width of 1.25 inches, Head Thickness of 0.25 inches, Leg Width of 0.50 inches, and Leg Thickness of 0.25 inches.

2.3.4 Staples

Staples shall be as recommended by the manufacturer.

2.4 SYNTHETIC GRID AND SHEET SYSTEMS

Synthetic grids shall not be used.

2.5 CRUSHED ROCK

Crushed rock shall be crushed run between a minimum 1 inches and a maximum 4 inches.

2.6 GRAVEL

Gravel shall be river run between a minimum 1 inches and a maximum 4 inches. Contractor shall submit sieve test results for both gravel and SAND.

2.7 ARTICULATING CELLULAR CONCRETE BLOCK SYSTEMS

Articulating cellular concrete block systems shall not be used.

2.8 WATER

Unless otherwise directed, water shall be the responsibility of the Contractor. If freshwater is not available from local sources, the Contractor is responsible for supplying water from their own sources. Water shall be free of oil, acid, alkalis, salts and other substances toxic to plant life.

PART 3 EXECUTION

3.1 CONDITIONS

The Contractor shall submit a construction work sequence schedule, with the approved erosion control plan a minimum of 30 days prior to start of construction. The work schedule shall coordinate the timing of land disturbing activities with the provision of erosion control measures. Erosion control operations shall be performed under favorable weather conditions; when excessive moisture, frozen ground or other unsatisfactory conditions prevail, the work shall be stopped as directed. When special

conditions warrant a variance to earthwork operations, a revised construction schedule shall be submitted for approval. Erosion control materials shall not be applied in adverse weather conditions which could affect their performance.

3.1.1 Finished Grade

The Contractor shall verify that finished grades are as indicated on the drawings; finish grading and compaction shall be completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the work. The location of underground utilities and facilities in the area of the work shall be verified and marked. Damage to underground utilities and facilities shall be repaired at the Contractor's expense.

3.1.2 Placement of Erosion Control Blankets

Before placing the erosion control blankets, ensure the subgrade has been graded smooth; has no depressed, void areas; is free from obstructions, such as tree roots, projecting stones or other foreign matter. Vehicles shall not be permitted directly on the blankets.

3.1.3 Synthetic Grid

Synthetic grids shall not be used.

3.1.4 Concrete Cellular Block

Concrete cellular block shall not be used.

3.2 SITE PREPARATION

3.2.1 Soil Test

Soil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size and mechanical analysis. Sample collection onsite shall be random over the entire site. The test shall determine the soil particle size as compatible for the specified material.

3.2.2 Layout

Erosion control material locations may be adjusted to meet field conditions. When soil tests result in unacceptable particle sizes, a shop drawing shall be submitted indicating the corrective measures.

3.2.3 Protecting Existing Vegetation

When there are established lawns in the work area, the turf shall be covered and/or protected or replaced after construction operations. Existing trees, shrubs, and plant beds that are to be preserved shall be barricaded along the dripline. Damage to existing trees shall be mitigated by the Contractor at no additional cost to the Government. Damage shall be assessed by a state certified arborist or other approved professional using the National Arborist Association's tree valuation guideline.

3.2.4 Obstructions Below Ground

When obstructions below ground affect the work, shop drawings showing proposed adjustments to placement of erosion control material shall be submitted for approval.

3.3 INSTALLATION

3.3.1 Synthetic Binders

Synthetic binders shall be applied heaviest at edges of areas and at crests of ridges and banks to prevent displacement. Binders shall be applied to the remainder of the area evenly at the rate recommended by the manufacturer.

3.3.2 Seeding

When seeding is required prior to installing mulch on synthetic grid systems the Contractor shall verify that seeding will be completed in accordance with Sections 02300 EARTHWORK and 02921A SEEDING.

3.3.3 Mulch Installation

Prior to mulching, complete the required grading and install needed sediment control practices. Soil amendments (lime and fertilizer) should be incorporated and surface roughening accomplished as needed prior to mulching. Seed should be applied prior to mulching except in the following cases:

a. Where seed is to be applied as part of hydro seed slurry containing fiber mulch.

b. Where seed is to be applied following straw mulch spread during winter months.

Mulch materials shall be spread uniformly, by hand or machine. When spreading straw mulch by hand, place 90 lbs of straw in each 1,000 square foot section (2 tons per acre) to facilitate uniform distribution. Straw mulch must be anchored immediately after spreading to prevent displacement. Other organic mulches do not require anchoring. The following methods of anchoring may be used:

a. Mulch anchoring tool such as a Krimper Tool, or similar tool designed to punch mulch into the soil surface. This method is limited to use on slopes where equipment can operate safely. Machinery shall be operated on the contour wherever possible.

b. Fiber Mulch: Apply fiber mulch by means of a hydro seeder at a rate of 500-750 pounds per acre over top of straw mulch.

c. Liquid mulch binders: Application of liquid mulch binders and tackifiers should be heaviest at edges of areas and at crests of ridges and banks, to prevent displacement. The remainder of the area should have binder applied uniformly. Binders may be applied after mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. Synthetic binders (formulated binders or organically formulated products) approved by the Construction Supervisor may be used as recommended by the manufacturer to anchor mulch. Asphalt Binders will not be used. d. Mulch netting: Lightweight plastic, cotton, or paper nets may be stapled over the mulch according to manufacturer's recommendations.

Approved chemical mulches* may be used alone only in the following situations:

a. Where no other mulching material is available.

b. In conjunction with temporary seeding during the times when mulch is not required for that practice.

c. From March 15 to May 1, and August 15 to September 30, provided that they are used on roughened areas with slopes no steeper than 4:1. If rill erosion occurs, another mulch material shall be applied immediately. *Note: Approved chemical mulches may be used to bind other mulches or with fiber mulch in a hydro

seeded slurry at any time. Manufacturer's recommendations for application of chemical mulches shall be followed.

3.3.4 Mulch Control Netting

Netting may be stapled over mulch according to manufacturer's recommendations.

3.3.5 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.3.6 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall not be used.

3.3.7 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

3.3.8 Asphalt Adhesive Coated Mulch

Asphalt adhesive coated mulch shall not be used.

3.3.9 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydraulic mulch operation.

3.3.10 Hydraulic Mulch Application

3.3.10.1 Unseeded Area

Hydraulic mulch shall be installed as indicated and in accordance with manufacturer's recommendations. Hydraulic mulch shall be mixed with water at the rate recommended by the manufacturer for the area to be covered. Mixing shall be done in equipment manufactured specifically for hydraulic mulching work, including an agitator in the mixing tank to keep the mulch evenly disbursed.

3.3.10.2 Seeded Area

For drill or broadcast seeded areas, hydraulic mulch shall be applied evenly at the rate of 4000 pounds per acre. For hydraulic seeded areas, mulch shall be applied at the rate of 2000 pounds per acre with the seed and fertilizer, and at the rate of 2000 pounds per acre in a second application of mulch only.

3.3.11 Erosion Control Blankets

a. Erosion control blankets shall be installed as indicated and in accordance with manufacturer's recommendations. The extent of erosion control blankets shall be as shown on drawings.

b. Erosion control blankets shall be oriented in vertical strips and anchored with staples, as indicated. Adjacent strips shall be abutted to allow for installation of a common row of staples. Horizontal joints between erosion control blankets shall be overlapped sufficiently to accommodate a common row of staples with the uphill end on top.

c. Where exposed to overland sheet flow, a trench shall be located at the uphill termination. The erosion control blanket shall be stapled to the bottom of the trench. Backfill and compact the trench as required.

d. Where terminating in a channel containing an installed blanket, the erosion control blanket shall overlap installed blanket sufficiently to accommodate a common row of staples.

3.4 CLEAN-UP

Excess material, debris, and waste materials shall be disposed offsite at an approved landfill or recycling center. Adjacent paved areas shall be cleared. Immediately upon completion of the installation in an area, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed. Signage shall be in accordance with Section 10430 EXTERIOR SIGNAGE.

3.5 WATERING SEED

Watering shall be started immediately after installing erosion control blanket. Water shall be applied to supplement rainfall at a sufficient rate to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over seeded areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.6 MAINTENANCE RECORD

A record shall be furnished describing the maintenance work performed, record of measurements and findings for product failure, recommendations for repair, and products replaced.

3.6.1 Maintenance

Maintenance shall include eradicating weeds; protecting embankments and ditches from surface erosion; maintaining the performance of the erosion control materials and mulch; protecting installed areas from traffic.

3.6.1.1 Maintenance Instructions

Written instructions containing drawings and other necessary information shall be furnished, describing the care of the installed material; including, when and where maintenance should occur, and the procedures for material replacement.

3.6.1.2 Patching and Replacement

Unless otherwise directed, material shall be placed, seamed or patched as recommended by the manufacturer. Material not meeting the required performance as a result of placement, seaming or patching shall be removed from the site. The Contractor shall replace the unacceptable material at

no additional cost to the Government.

3.6.2 Maintenance of Mulch

All mulches and soil coverings should be inspected periodically to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, re-install netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place up until grasses are firmly established.

3.7 SATISFACTORY STAND OF GRASS PLANTS

When erosion control blanket type XI (revegetation mat) is installed, the grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high. A satisfactory stand of grass plants from the revegetation mat area shall be a minimum 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total revegetation mat area.

-- End of Section --

SECTION 02378A

GEOTEXTILE USED AS FILTERS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 123	(2003) Standard Terminology Relating to Textiles
ASTM D 4354	(1999) Sampling of Geosynthetics for Testing
ASTM D 4355	(2002) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)
ASTM D 4491	(1999a) Water Permeability of Geotextiles By Permittivity
ASTM D 4533	(1991; R 1996) Trapezoid Tearing Strength of Geotextiles
ASTM D 4632	(1991; R 1996) Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(1999a) Determining Apparent Opening Size of a Geotextile
ASTM D 4833	(2000el) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
ASTM D 4873	(2002) Identification, Storage, and Handling of Geosynthetic Rolls

ARMY CORPS OF ENGINEERS (COE)

EM 1110-2-1601	(1991; Change 1-1994) Hydraulic Design of Flood Control Channels

1.2 UNIT PRICES

1.2.1 Geotextiles

1.2.1.1 Payment

Payment will be made at the contract unit price and will constitute full compensation to the Contractor for providing all plant, labor, material,

and equipment and performing all operations necessary for the complete and satisfactory installation of the geotextile. The following items are included in the contract unit price for geotextiles and will not be counted a second time in the process of determining the extent of geotextile placed: Material and associated equipment and operation used in laps, seams, or extra length; securing pins and associated material, equipment, and operations; and material and associated equipment and operations used to provide cushioning layer of sand or gravel or both to permit increase in allowable drop height of stone. No payment will be made for geotextiles replaced because of waste, contamination, damage, repair, or due to Contractor fault or negligence.

1.2.1.2 Measurement

Installed geotextiles will be measured for payment in place to the nearest square yard of protected area as delineated on the drawings.

1.2.1.3 Unit of Measure

Unit of measure: square yard.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-04 Samples

Geotextile; G, DO

If requested by the Contracting Officer, submit geotextile samples for testing to determine compliance with the requirements in this specification. When required, submit samples a minimum of 60 days prior to the beginning of installation of the same textile. Upon delivery of the geotextile, submit duplicate copies of the written certificate of compliance signed by a legally authorized official of the manufacturer. The certificate shall state that the geotextile shipped to the site meets the chemical requirements and exceeds the minimum average roll value listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Upon request, supply quality control and quality assurance tests for the geotextile. All samples provided shall be from the same production lot as will be supplied for the contract, and shall be the full manufactured width of the geotextile by at least 10 feet long, except that samples for seam strength may be a full width sample folded over and the edges stitched for a length of at least 5 feet. Samples submitted for testing shall be identified by manufacturer's lot designation. For needle punched geotextile, the manufacturer shall certify that the geotextile has been inspected using permanent on-line metal detectors and does not contain any needles.

SD-07 Certificates

Geotextile; G, DO

Submit the manufacturer's certification of the geotextile material. All brands of geotextile and all seams to be used will be accepted on the basis of mill certificates or affidavits. Submit duplicate copies of the mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical and manufacturing requirements stated in this specification.

1.4 SHIPMENT, HANDLING, AND STORAGE

1.4.1 Shipment and Storage

Only approved geotextile rolls shall be delivered to the project site. All geotextile shall be labeled, shipped, stored, and handled in accordance with ASTM D 4873. No hooks, tongs, or other sharp instrument shall be used for handling geotextile.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Geotextile

The geotextile shall be a non-woven pervious sheet of plastic yarn as defined by ASTM D 123. The geotextile shall equal or exceed the minimum average roll values listed in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Strength values indicated in the table are for the weaker principal direction.

2.1.1.1 Physical Requirements

TABLE 1

MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE

ACCEPTABLE TEST

PROPERTY	TEST METHOD	RESULTS
Apparent Opening	ASTM D 4751 Sieve Nos. 70-100	Size (AOS)
Geotextile Permittivity	ASTM D 4491	0.7 sec^-1 I minimum.
Puncture Strength (Unaged Geotextile)	ASTM D 4833	230 lbs minimum.
Bursting Strength (Unaged Geotextile)	ASTM D 3786	350 psi minimum.
Trapezoidal Tearing Strength (Unaged Geotextile)	ASTM D 4533	140 pounds minimum in any principal direction.
Grab Tensile Strength (Unaged Geotextile)	ASTM D 4632	380 lbs. min. in any principal direction.

Breaking Elongation (Unaged Geotextile)	ASTM D 4632	50% minimum in any principal direction.
Ultraviolet Degradation Unaged Geotextile)	ASTM D 4355	50% strength retained at 500 hours.
Seam Strength (Unaged Geotextile)	ASTM D 4632	300 lb

Unaged geotextile is defined as geotextile in the condition received from the manufacturer or distributor. AOS is defined as the number of the U.S. Standard Sieve having openings closest in size to the geotextile openings. All numerical values represent minimum average roll values, i.e., any roll in a lot shall meet or exceed the minimum in the table.

2.1.1.2 Geotextile Fiber

Fiber used in the manufacturing of the geotextile shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of polyolefins, polyesters, or polamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration caused by ultraviolet light and heat exposure. Reclaimed or recycled fibers or polymer shall not be added to the formulation. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile.

2.1.2 Seams

The seams of the geotextiles shall be sewn with thread of a material meeting the chemical requirements given above for geotextile yarn or shall be bonded by cementing or by heat. The sheets of geotextile shall be attached at the factory or another approved locations, if necessary, to form sections not less than 20 feet wide. Seams shall be tested in accordance with method ASTM D 4884. The strength of the seam shall be not less than 90 percent of the required grab tensile strength of the unaged geotextile in any principal direction.

2.1.3 Securing Pins

The geotextile shall be secured to the embankment or foundation soil by pins to prevent movement prior to placement of revetment materials. Other appropriate means to prevent movement such as staples, sand bags, and stone could also be used. Securing pins shall be inserted through both strips of overlapped geotextile along the line passing through midpoints of the overlap. Securing pins shall be removed as placement of revetment materials are placed to prevent tearing of geotextile or enlarging holes maximum spacing between securing pins depends on the steepness of the embankment slope. The maximum pins spacing shall be equal to or less than the values listed in TABLE 2, MAXIMUM SPACING FOR SECURING PINS. When windy conditions prevail at the construction site, the number of pins should be increased upon the demand of the Contracting Officer. Terminal ends of the geotextile shall be anchored with key trench or apron at crest, toe of the slope and upstream and downstream limits of installation.

TABLE 2

MAXIMUM SPACING FOR SECURING PINS

EMBANKMENT	SPACING, feet
STEEPER THAN 1V ON 3H	2
1V ON 3H TO 1V ON 4H	3
FLATTER THAN 1V ON 4H	5

2.2 INSPECTIONS, VERIFICATIONS, AND TESTING

2.2.1 Manufacturing and Sampling

Geotextiles and factory seams shall meet the requirements specified in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Conformance testing shall be performed in accordance with the manufacturer's approved quality control manual.

2.2.2 Site Verification and Testing

Samples shall be collected at approved locations upon delivery to the site at the request of the Contracting Officer. Samples shall be tested to verify that the geotextile meets the requirements specified in TABLE 1, MINIMUM PHYSICAL REQUIREMENTS FOR DRAINAGE GEOTEXTILE. Samples shall be identified by manufacturer's name, type of geotextile, lot number, roll number, and machine direction. Testing shall be performed at an approved laboratory. Test results from the lot under review shall be submitted and approved by the Contracting Officer prior to deployment of that lot of geotextile. Rolls which are sampled shall be immediately rewrapped in their protective covering.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Surface on which the geotextile will be placed shall be prepared to a relatively smooth surface condition, in accordance with the applicable portion of this specification and shall be free from obstruction, debris, depressions, erosion feature, or vegetation. Any irregularities will be removed so as to insure continuous, intimate contact of the geotextiles with all the surface. Any loose material, soft or low density pockets of material, will be removed; erosion features such as rills, gullies etc. must be graded out of the surface before geotextile placement.

3.2 INSTALLATION

3.2.1 General

The geotextile shall be placed in the manner and at the locations shown. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage.

3.2.2 Placement

The geotextile shall be placed with the long dimension parallel to the

centerline of the channel and laid smooth and free of tension, stress, folds, wrinkles, or creases. The strips shall be placed to provide minimum width of 2 inches of overlap for each joint. The placement procedure requires that the length of the geotextile be approximately 5 percent greater than the slope length. The Contractor shall adjust the actual length of the geotextile used based on initial installation experience. Temporary pinning of the geotextile to help hold it in place until the bedding layer is placed shall be allowed. The temporary pins shall be removed as the bedding is placed to relieve high tensile stress which may occur during placement of material on the geotextile. Design protection of riprap should be in compliance with EM 1110-2-1601. Trimming shall be performed in such a manner that the geotextile shall not be damaged in any way.

3.3 PROTECTION

The geotextile shall be protected at all times during construction from contamination by surface runoff and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Any damage to the geotextile during its installation or during placement of bedding materials shall be replaced by the Contractor at no cost to the Government. The work shall be scheduled so that the covering of the geotextile with a layer of the specified material is accomplished within 7 calendar days after placement of the geotextile. Failure to comply shall require replacement of geotextile. The geotextile shall be protected from damage prior to and during the placement of riprap or other materials. Before placement of riprap or other materials, the Contractor shall demonstrate that the placement technique will not cause damage to the geotextile. In no case shall any type of equipment be allowed on the unprotected geotextile.

3.4 OVERLAPPING AND SEAMING

3.4.1 Overlapping

The overlap of geotextile rolls shall be 24 inches. Appropriate measures shall be taken to insure required overlap exists after cushion placement.

3.4.2 Sewn Seams

High strength thread should be used such that seam test should conform to ASTM D 4884. The thread shall meet the chemical, ultraviolet, and physical requirements of the geotextile, and the color shall be different from that of the geotextile. The seam strength shall be equal to the strength required for the geotextile in the direction across the seam. Overlapping J-type seams are preferable over prayer-type seams as the overlapping geotextile reduces the chance of openings to occur at the seam. Double sewing shall be used specially for field seams to provide a safety factor against undetected missed stitches.

3.5 FIELD TESTING

Geotextile in tension shall be field tested.

-- End of Section --

SECTION 02380

STONE, SHORELINE PROTECTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

ACI 305R	(1999) Hot Weather Concreting

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 127	(1988; R 1993el) Specific Gravity and Absorption of Coarse Aggregate
ASTM C 136	(1996a) Sieve Analysis of Fine and Coarse Aggregates
ASTM C 685	(2000) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM D 75	(1987; R 1997) Sampling Aggregates
ASTM D 1429	(1995; R 1999) Specific Gravity of Water and Brine
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM D 4791	(1999) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D 4992	(1994el) Evaluation of Rock to be Used for Erosion Control
ASTM D 5312	(1992) Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions
ASTM D 5313	(1992; R 1997) Evaluation of Durability of Rock for Erosion Control Under Wetting and Drying Conditions

ASTM D 5519	(1994) Particle Size Analysis of Natural and Man-Made Riprap Materials
ASTM E 548	(1994el) General Criteria Used for Evaluating Laboratory Competence

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 144	(1992) Standard Test Method for Resistance of Rock to Freezing and Thawing
COE CRD-C 148	(1969) Method of Testing Stone for Expansive Breakdown on Soaking in Ethylene Glycol
COE CRD-C 169	(1997) Standard Test Method for Resistance of Rock to Wetting and Drying
EM 1110-2-1601	(1994) Hydraulic Design of Flood Control Channels
EM 1110-2-1906	(1986) Laboratory Soils Testing

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST HB 44	(1997) NIST Handbook 44: Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices

1.2 UNIT PRICES

1.2.1 Bedding Layer(s)

1.2.1.1 Payment

Payment for gravel, crushed stone, and sand placed for bedding and/or filter material will be made at the applicable contract unit prices for Bedding Stone. Price(s) and payment(s) shall include all costs of furnishing, hauling, placing and maintaining the bedding and/or filter material until placement of the riprap cover is completed and accepted. Geotextiles used as filters will be paid for in accordance with provisions of 02378A GEOTEXTILES USED AS FILTERS. Preparation of the base will not be paid for separately and all costs incidental thereto shall be included in contract prices for other items for which payment will be made. No payment will be made for excess thickness of bedding and/or filter material, nor for material required to replace subgrade material lost by rainwash, wind erosion, overexcavation or otherwise.

1.2.1.2 Measurement

Gravel, placed for bedding and/or filter layers will be measured for payment by the ton. Quantities will be computed to the nearest whole ton. Gravel, crushed stone, and sand will be measured for payment, in the presence of the Contracting Officer, by weighing on approved, accurately calibrated scales furnished by and at the expense of the Contractor. The scales shall be capable of printing a weight ticket including time, date, truck number, and weight. Weight certificates furnished by a public weighmaster will be acceptable.

Gravel, placed for bedding and/or filter layers will be measured for payment as the volume determined by multiplying the area, as measured in the field, of the surface on which the gravel, crushed stone, or sand is placed, by the thickness measured perpendicular to the surface of the gravel, crushed stone, or sand as dimensioned on the contract drawings.

Geotextiles used as filters will be measured in accordance with provisions of 02378A GEOTEXTILES USED AS FILTERS. Preparation of the base will not be measured for payment.

1.2.1.3 Unit of Measure

Unit of measure: ton.

1.2.2 Graded Stone

1.2.2.1 Payment

Payment for stone satisfactorily placed in constructing the revetment will be made at the contract unit price for [Graded Stone ["A"] ["B"] [and/or] ["C"], 125-pound stone]. Price(s) and payment(s) shall constitute full compensation for furnishing all plant, labor, stone, and performing all work necessary in placing the stone in constructing the revetment as specified herein or shown on the drawings. Full payment for stone will not be permitted until bank has been completed in a satisfactory manner. Twenty (20) percent of the payment for stone will be retained until bank paving has been completed in a satisfactory manner.

1.2.2.2 Measurement

Stone will be measured for payment by the ton. Quantities will be computed to the nearest whole ton. Stone will be measured for payment, in the presence of the Contracting Officer, by weighing on approved, accurately calibrated scales furnished by and at the expense of the Contractor. The scales shall be capable of printing a weight ticket including time, date, truck number, and weight. Weight certificates furnished by a public weighmaster will be acceptable.

Stone will be measured for payment as the volume determined by multiplying the area, as measured in the field, of the surface on which the stone is placed, by the thickness of the stone measured perpendicular as dimensioned on the contract drawings.

a. Truckload. Each truck load will be weighed to the nearest 0.1 ton and the final quantity rounded to the nearest whole ton. Stone will be measured for payment by weighing on approved scales before being placed in the work. Scales shall be of sufficient length to permit simultaneous weighing of all axle loads and shall have an accuracy within 0.2 percent throughout the range of the scales. The scale's accuracy shall conform to the applicable requirements of NIST HB 44 and shall be certified by an acceptable scales company representative prior to weighing any stone. The scales shall be located at the site of work. The scales shall be capable of printing a weight ticket including time, date, truck number, and weight. If commercial scales are readily available in close proximity (within 10 miles) of site of work, documentation shall be submitted certifying that the scales meet the requirements of the specification. The Contractor shall furnish the scales and shall weigh the stone in the presence of the Contracting

Officer, who will read and record the weights thereof. The Contracting Officer may elect to accept certified railroad weights or weight certificates furnished by a public weighmaster in lieu of scale weights at the jobsite. Quarry weights will not be accepted. Scales will be checked and certified before hauling stone and after each 50,000 tons increment of stone weighed under this contract.

b. Stockpiled Stone. If the Contractor elects to stockpile stone on the worksite or offsite, the stone shall be weighed immediately before placement by either the method described above. Stone placed in temporary storage on the worksite as specified in paragraph WORKSITE STOCKPILE will not be required to be re-weighed prior to placement.

(1) Determination of Excess Stone. All stone outside the limits and tolerances of the cross sections of the structure, except variations so minor as not to be measurable, will be deducted from the quantity of new stone for which payment is to be made. Weight of excess stone will be determined from the cross sections obtained by the method provided for in paragraph FINAL SURVEYS, on the basis that the cubic feet of volume (including voids) for each type of stone, as listed in the Table in paragraph FACTORS USED FOR CONVERTING IN PLACE VOLUME TO WEIGHT, is equal to one ton or 2,000 pounds for the bulk specific gravity and percentage of voids shown. If the bulk specific gravity of the stone furnished or the percentage of voids is other than as listed below, the cubic feet of volume equaling 2,000 pounds shall be recomputed as described in paragraph REVISIONS OF BIDDING SCHEDULE QUANTITIES. Should any excess stone be disclosed above the tolerance line as defined in paragraph TOLERANCES, its volume will be computed by the average end area method, based upon the cross section in the following manner. The average end area of excess stone above the tolerance line for two (2) successive cross sections, multiplied by the distance between the cross sections will be accepted as the volume. The Contractor will not be required to remove such excess stone and deductions for the weights thereof will be made from contract payments for new stone. In addition to the above, stone, which has been delivered to the site and has been lost or wasted or otherwise not properly incorporated into the final required work, shall be deducted from the quantity for which payment is to be made.

(2) Final Surveys. Survey work and measurements required for determination of excess volume computations for stone materials shall be performed by the Contractor in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer not less than 3 days in advance of each survey. In the event of unavailability of the Contracting Officer, the Contractor shall perform the survey and certify to the Contracting Officer that it complies with the specifications. Cross section surveys shall be taken perpendicular to the axis of the structures. Elevations and soundings shall be taken on lines 25 feet apart measuring along the structure reference line, with the readings at 5-foot intervals and at breaks in the grade along the line. Other survey intervals and readings may be used if deemed appropriate or advisable by the Government's on-site representative. Additional cross sections, elevations, and soundings may be taken if determined necessary by the Government's on-site representative. Determination of quantities will be made by the Government's on-site representative and having once been made, will not reopen,

except on evidence of collusion, fraud or obvious error. Prior to performing any work under this Section, the Contractor shall coordinate all operations with the Government's on-site representative so that excess volume surveys will be made at the appropriate time. The surveys made under paragraph CHECK SURVERYS may be used when deemed appropriate by the Government's on-site representative, as part of the surveys required herein. Stone quantity computations shall be based entirely upon weights of new stone as determined from carrier displacement or certified scale weight tickets. [Existing stone placed in lieu of new stone from off-site sources is excluded from measurement and payment.]

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Riprap; G, RO
Bedding Material; G, RO

Submit the source for materials used in riprap, and [filter][,][bedding.

SD-06 Test Reports

Gradation Test; G, RO

Submit the gradation tests using the GRADATION TEST DATA SHEET enclosed at end of this section for riprap or stone.

Evaluation Testing of Stone; G, RO

Quality test on the stone in accordance with PART 2 paragraph EVALUATION TESTING OF STONE shall be the responsibility of the Contractor. Prior to delivery of such material to the worksite, submit a copy of the laboratory inspection report along with actions taken to correct deficiencies. Submit a copy of the test reports.

Bedding Material; G, RO

Submit test reports attesting that the bedding material meet specified requirements.]

Bulk Specific Gravity; G, RO

At least 60 calendar days in advance of shipment of stone to the work site, submit a copy of bulk specific gravity test results for each gradation range of stone proposed to be furnished. The information shall be furnished prior to preparation of pre-production demonstration stockpiles.

SD-07 Certificates

Stone; G, RO
Bedding Material; G, RO]

Submit certificates of compliance attesting that the materials meet specification requirements.

Laboratory; G, RO

Submit a copy of the documents, provided by the Materials Testing Center (MTC) at CEWES[or other governmental agency], that validates that the laboratory can perform the required tests. The individual tests shall be listed for which the validation covers along with the date of the inspection.

Weigh Scale Certification; G, RO

Submit a copy of the certification from the regulation agency attesting to the scale's accuracy.

Certified Weight Scale Tickets; G, RO

Submit a copy of each certified weight scale ticket 5 working day(s) after weighing.

1.4 DESIGN REQUIREMENTS

1.4.1 Factors Used for Converting In-Place Volume to Weights

The following factors were used in converting the in-place volume to the quantities shown in the BIDDING SCHEDULE.

1.4.1.1 Revision of Bidding Schedule Quantities

The estimated quantities of stone listed in the BIDDING SCHEDULE were computed on the basis of stone having a percentage of voids and a bulk specific gravity (saturated surface dry (SSD) basis) as shown in the above table based on water having a unit weight of 62.4 pounds per cubic foot. When the bulk specific gravity (SSD) of the stone to be used in the work is other than that shown in the above table, the estimated quantities will be revised by multiplying them by the fraction which results when the bulk specific gravity (SSD) of the stone furnished is divided by the value shown in the above table for each respective stone gradation. Revision for the percentage of voids will likewise be made. The Contracting Officer will issue a modification to the contract in accordance with the Contract Clause, CHANGES, in Section 00700 CONTRACT CLAUSES to adjust the estimated quantities in the BIDDING SCHEDULE. The revised quantities will then be the quantities from which the allowable fifteen percent (15%) variation in estimated quantity, for payment purposes, will be determined as defined in Contract Clause, VARIATIONS IN ESTIMATED QUANTITIES, in Section 00700 CONTRACT CLAUSES.

1.4.1.2 Re-revision of Estimated Quantities

If during the progress of the work it is determined that the delivered stone actually placed has a percentage of voids or a bulk specific gravity range different from that on which the BIDDING SCHEDULE is based, the BIDDING SCHEDULE will be further revised in accordance with paragraph REVISION OF BIDDING SCHEDULE QUANTITIES.

1.5 GOVERNMENT TESTING AND STUDIES

1.5.1 Stone

1.5.1.1 General

All stone shall be durable material as approved by the Contracting Officer. Selected stone from the required excavation may be used if it satisfies all requirements as to quality and dimensions. In case an unlisted source is to be used, the Contractor shall show that an adequate quantity of material is available and provide quality test data. Stone shall be of a suitable quality to ensure permanence in the structure and in the climate in which it is to be used. It shall be free from cracks, blast fractures, bedding, seams and other defects that would tend to increase its deterioration from natural causes. Inspections for cracks, fractures, seams and defects shall be made by visual examination. If, by visual examination, it is determined that 20 percent or more of the stone produced contains hairline cracks, then all stone produced by the means and measures which caused the fractures shall be rejected. A hairline crack that is defined as being detrimental shall have a minimum width of 4 mil and shall be continuous for one-third the dimension of at least two sides of the stone. The stone shall be clean and reasonably free from soil, quarry fines, and shall contain no refuse. The stone shall be clean and adequately free from all foreign matter. Any foreign material adhering to or combined with the stone as a result of stockpiling shall be removed prior to placement.

1.5.1.2 Sources

Stone shall be furnished from any of the sources listed at the end of this section, or at the option of the Contractor may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions herein stated. If the Contractor proposes to furnish stone from a source not currently listed at the end of this section, the Government will conduct a quarry investigation and evaluate the quality test data provided by the contractor to determine whether acceptable stone can be produced from the proposed source. Satisfactory service records on other work may be acceptable. In order for stone to be acceptable on the basis of service records, stone of a similar size must have been placed in a similar thickness and exposed to weathering under similar conditions as are anticipated for this contract, and must have satisfactorily withstood such weathering for a minimum of 5 years. If no such records are available, the Government will conduct tests to assure the acceptability of the stone. In addition to an acceptable 5 year service record, the Contracting Officer has the option to elect to have representative samples taken and tested.

a. List of Sources

(1) Category I Sources: Category I sources have been inspected and evaluated within the last five years by the Government and have produced stone materials of acceptable quality from satisfactory geological formations. The Category I sources have previously demonstrated effective quality control programs at the source and the test results of the materials furnished have been verified that some material are of satisfactory quality. In a like manner, the source would be capable of providing the quality[, quantity, and gradation of required stone materials. Further evaluation and testing of the source will not be required

unless the preparation of the required demonstration stockpile reveals an adverse condition not previously taken into account.

(2) Category II Sources: Category II sources either have not been inspected and evaluated within the past five years or have had a deficiency in the past which may or may not affect its qualifications to provide stone materials for this project. Deficiencies may include, but are not limited to: ineffective quality control program; unsatisfactory production techniques; unacceptable quality of material in the geological formation being quarried; insufficient quantities of required materials; or unsatisfactory durability of stone materials previously furnished. These factors of this kind do not disqualify the source for this project. A current inspection and evaluation of the source by the Government would be necessary to determine whether acceptable stone can be produced from the proposed source][before allowing the source to proceed with preparation of demonstration stockpiles. Disapproval of a proposed Category II source based on the inspection and evaluation would necessitate having the Contractor name a replacement source from the Category I list.

b. Selection of Source. The Contractor shall designate in writing only one source or one combination of sources from which he proposes to furnish stone. If the Contractor proposes to furnish stone from a source not listed at the end of this section, he may designate only a single unlisted source for stone and he shall notify the Contracting Officer at least 60 workdays before the stone leaves the quarry. It is the Contractor's responsibility to determine that the stone source or combination of sources selected is capable of providing the quality, quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work. Samples for acceptance testing shall be provided in accordance with paragraph EVALUATION TESTING below. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed in Category I at the end of this section at no additional cost to the Government.

c. Acceptance of Materials. Acceptance of a source of stone is not to be construed as acceptance of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for stone as determined by the Contracting Officer. The Contracting Officer also reserves the right to reject individual units of produced specified materials in stockpiles at the quarry, all transfer points, and at the project construction site when such materials are determined to be unsuitable. During the course of the work, the stone may be tested by the Government, if the Contracting Officer determines that testing is necessary. If such tests are determined necessary, the testing will be done in or commercial laboratory selected by the Government. Materials produced from a listed or unlisted source shall meet all the requirements herein. The cost of testing will be at the Government's expense. During the contract period, both prior to and after materials are delivered to the job site, visual inspections and measurements of the stone materials may be performed by the Contracting Officer. If the Contracting Officer, during the inspections, finds that the stone quality, gradation or weights of stone being furnished are not as specified or are questionable, re-sampling and re-testing by the Contractor shall be required. Sampling of the delivered stone for testing and the manner in which the testing is to be performed shall be

as directed by the Contracting Officer. This additional sampling and testing shall be performed at the Contractor's expense when test results indicate that the materials do not meet specified requirements. When test results indicate that materials meet specified requirements, an equitable adjustment in the contract price will be made for the sampling and testing. Any material rejected shall be removed or disposed of as specified and at the Contractor's expense.

1.5.1.3 Evaluation Testing of Stone

The tests to which the stone may be subjected will include petrographic analysis, specific gravity, unit weight, absorption, wetting and drying, freezing and thawing and such other tests as may be considered necessary to demonstrate that the stone is of a satisfactory quality which is at least equivalent to stone from the sources listed at the end of this section.

a. Unit Weight and Absorption. Stone shall weigh more than 170 pounds per cubic foot and have a bulk specific gravity, saturated surface dry, (SSD), greater than 2.48. The stone shall have an absorption less than 2 percent unless other tests and service records show that the stone is satisfactory. The method of test for unit weight and absorption will be ASTM C 127, except the unit weight will be calculated in accordance with Note No. 5 using bulk specific gravity, saturated surface dry.

b. Samples. Samples of stone from a source not listed at the end of this section shall be taken by a representative of the quarry under the supervision of the Contracting Officer for testing and acceptance prior to delivery of any stone from this source to the site of the work. Samples shall consist of at least three pieces of stone, roughly cubical in shape and weighing not less than 150 pounds each from each unit that will be used in the production of the required stone. If the source is an undeveloped quarry, or if the operation has been dormant for more than one year such that fresh samples are not available, the Contractor shall expose fresh rock for 20 feet horizontally and for the full height of the face proposed for production, prior to the field evaluation. The Contracting Officer may also require documentation of subsurface exploration of an undeveloped quarry in order to determine whether or not sufficient reserves are available. The samples shall be shipped at the Contractor's expense to a certified laboratory agreed upon by the Contracting Officer for testing.

c. Tests. The tests will be conducted in accordance with applicable Corps of Engineers methods of tests given in the Handbook for Concrete and Cement or ASTM methods of tests. The cost of testing one new source will be borne by the Government.

1.5.1.4 [Random Sampling

The stone produced by each source will be sampled by the Government for Quality Assurance testing on the basis of a minimum once each year[or once during the production of each 50 000 tons of stone produced each year for the Government]. The samples will be evaluated based upon petrographic analysis, specific gravity, unit weight, bulk specific gravity (SSD), and absorption.

1.5.1.5 [Drop Test

A drop test provides an immediate evaluation of the durability of very large stone during handling of the stone including placement into a structure. For comparability, the test stone(s) shall be dropped from a

bucket or by other means from a height of not less than half the average diameter of the stone onto a rigid surface or second stone of comparable size. Dumping from a truck is not acceptable. The stone shall be examined carefully before as well as after the completion of the test. Failure criteria is the development of new cracks, opening of old cracks, and the loss of piece from the surface of the stone. Each stone shall be dropped a total of five times for evaluation purposes with examination after each drop. The Contractor shall provide all necessary equipment and operating personnel to help perform the testing.

1.6 CONSTRUCTION TOLERANCES

The finished surface and stone layer thickness shall not deviate from the lines and grades shown by more than the tolerances listed below. Tolerances are measured perpendicular to the indicated neatlines. Extreme limits of the tolerances given shall not be continuous in any direction for more than five (5) times the nominal stone dimension nor for an area greater than [100][200][1000] square feet of the structure surface.

NEATLINE TOLERANCES

MATERIAL	ABOVE NEATLINE inches	BELOW NEATLINE inches
Bedding	3	0
Riprap	6	0

The intention is that the work shall be built generally to the required elevations, slope and grade and that the outer surfaces shall be even and present a neat appearance. Placed material not meeting these limits shall be removed or reworked as directed by the Contracting Officer. Payment will not be made for excess material which the Contracting Officer permits to remain in place.

1.7 TERMINOLOGY

1.7.1 Bank Stabilization

This paragraph explains certain terminology which is common to construction of bank stabilization work and which may not be self explanatory in the subsequent applicable provisions of the technical specifications and on the drawings.

1.7.1.1 Revetments

The term "revetment" applies to various types of stabilization structures that are constructed along the river approximately parallel to the current. The revetments are constructed of stone or piling.

1.7.1.2 Dikes

The term "dike" applies to the types of stabilization structures that are constructed along the river at an angle to the current. The dikes are constructed of stone or piling.

1.7.2 Standard Drawings

Details of various types of structures in general use are shown on standard

drawings forming a part of these specifications.

1.7.3 Stone Protection

Stone Protection is defined as a system which includes a layer of bedding material or layers of filter material beneath a layer or layers of riprap. Stone protection is placed around structures in slack water or within a dewatered site. Stone protection may also be used to protect channel banks when it is placed in the dry or in slack water.

1.7.4 Riprap

Riprap is defined as a material having a gradation band similar to those specified in EM 1110-2-1601, Chapter 3, uniform graded material. Riprap is normally produced by mechanical methods, with a jaw crusher and grizzly after the stone has been mined by blasting in a quarry. Riprap gradations have a maximum top size of 3.5 tons.

1.7.5 Graded Stone

Graded Stone is defined as material with gradations that are produced by the mining technique and minimal additional processing other than the use of a skeleton bucket or a bar grizzly. The gradation band have more fines than riprap and have gradations with top size up to 3.5 tons and could be classified as being well graded.

1.7.6 Shoreline Protection

Shoreline Protection is defined as a system of bedding or filter materials and stone used to protect coastlines of lakes and oceans and for harbor protection.

PART 2 PRODUCTS

2.1 BEDDING MATERIAL

2.1.1 General

Bedding material shall consist of [a washed][gravel or] crushed stone.

2.1.2 Material

Bedding material shall be composed of tough, durable particles, adequately free from thin, flat and elongated pieces, and shall contain no organic matter nor soft, friable particles in quantities considered objectionable by the Contracting Officer. The aggregates shall meet the quality requirements of ASTM C 33 or paragraph REGULATORY REQUIREMENTS. Gradation shall conform to the following requirements:

% LESS THAN BY WEIGHT	WEIGHT (LB)	DIMENSION (FT)
0 (min.)	0.07	0.07
15	0.11	0.09
50	0.38	0.13
85	1.29	0.20
100 (max.)	2.17	0.23

The bedding material shall be well-graded between the limits shown. At least one test shall be performed on each 1000 tons to be delivered to the project site for each specified gradation in accordance with ASTM C 136. A representative sample weighting not less than 100 pounds shall be removed from the bedding layer placed at locations directed by the Contracting Officer. All points on individual grading curves obtained from representative samples of bedding material shall lie between the boundary limits as defined by smooth curves drawn through the tabulated gradation limits plotted on ENG FORM 2087 or similar form. The individual gradation curves within these limits shall not exhibit abrupt changes in slope denoting either gap grading or scalping of certain sizes or other irregularities which would be detrimental to the proper functioning of the bedding layers.

2.2 STONE

2.2.1 General

2.2.1.1 Evaluation Testing of Stone

If the Contractor proposes to furnish stone from an unlisted source, the Contractor shall have evaluation tests performed on stone samples collected from the proposed source. The quarry investigation shall be performed by a registered geologist or registered engineer. The tests to which the stone shall be subjected include petrographic examination (ASTM C 295), bulk specific gravity (SSD), unit weight, absorption (ASTM C 127), resistance of stone to freezing and thawing (COE CRD-C 144, ASTM D 5312), and if argillaceous limestone and sandstone are used, resistance to wetting and drying (COE CRD-C 169, ASTM D 5313).

The laboratory to perform the required testing shall be validated based on compliance with ASTM E 548 and relevant paragraphs of ASTM D 3740, and no work requiring testing shall be permitted until the laboratory has been inspected and validated. The first inspection of the facilities shall be at the expense of the Government and any subsequent inspections required because of failure of the first inspection shall be at the expense of the Contractor.

a. Bulk Specific Gravity Range. All stone shall have a minimum bulk specific gravity, saturated surface dry (SSD), of 2.60 and a maximum bulk specific gravity of not more than 2.90 based upon water having a unit weight of 62.4 pounds per cubic foot. The method of test for bulk specific gravity (SSD) shall be ASTM C 127. Reference is made to paragraph FACTORS USED FOR CONVERTING IN-PLACE VOLUME TO WEIGHT for instructions for converting in-place volume to bid quantities and for instructions on adjusting bid schedule quantities for variations in bulk specific gravity and percentage of voids.

b. Unit Weight and Absorption. Stone shall weigh more than 170 pounds per cubic foot, and have a bulk specific gravity, saturated surface dry, greater than 2.60. The stone shall have an absorption less than 2 percent unless other tests and service records show that the stone is satisfactory. The method of test for unit weight and absorption shall be ASTM C 127, except the unit weight shall be calculated in accordance with Note No. 5 using bulk specific gravity, saturated surface dry.

c. Petrographic Examination. Stone shall be evaluated in accordance with ASTM C 295 which shall include information required by ASTM D 4992, paragraph 10. COE CRD-C 148 shall be used to perform Ethylene glycol tests required on rocks containing smectite as specified in ASTM D 4992 and on samples identified to contain swelling clays.

d. Resistance to Freezing and Thawing. Stone shall have a maximum loss of 10 percent after the number of cycles specified in ASTM D 5312, Figure 1, when determining the durability of stone when subjected to freezing and thawing in accordance with COE CRD-C 144, ASTM D 5312, except the surface area of one side of the sample shall be between 144 square inches and 2304 square inches.

e. Resistance of Rock to Wetting and Drying. Stone shall have a maximum loss of 1 percent when determining the durability of stone when subject to wetting and drying in accordance with COE CRD-C 169, ASTM D 5313, except the surface area of one side of the sample shall be between 144 square inches and 2304 square inches.

f. Samples. Samples of stone from a source not listed at the end of this section shall be taken by a representative of the Quarry under the supervision of the Contracting Officer for testing and acceptance prior to delivery of any stone from this source to the site of the work. Information provided with the samples shall include the location within the quarry from which the sample was taken along with a field examination of the quarry. The field examination shall include the information outline in ASTM D 4992, paragraph 7. Samples shall consist of at least three pieces of stone, roughly cubical in shape and weighing not less than 150 pounds each from each unit that shall be used in the production of the required stone. If the source is an undeveloped quarry, or if the operation has been dormant for more than one year such that fresh samples are not available, the Contractor shall expose fresh rock for 20 feet horizontally and for the full height of the face proposed for production, prior to the field evaluation. [The Contracting Officer may also require documentation of subsurface exploration of an undeveloped quarry in order to determine whether or not sufficient reserves are available.] The samples shall be shipped at the Contractor's expense to a laboratory validated by the government to perform the required tests.

g. Tests. The tests shall be conducted by the Contractor in accordance with applicable ASTM and Corps of Engineers methods of tests given in the Handbook for Concrete and Cement, and shall be performed at a laboratory validated by the government. The cost of testing shall be borne by the Contractor.

2.2.1.2 Quarry Operations

Quarry operations shall be conducted by the Contractor in a manner that shall produce stone conforming to the requirements specified and may involve selective quarrying, handling, processing, blending, and loading as

necessary, all of which shall be as specified in Section 01451 CONTRACTOR QUALITY CONTROL. Blasting and handling of rock shall be controlled by the Contractor to produce rock of the size ranges and quality specified. Techniques such as the use of proper hole diameter, hole depth, hole angle, burden and spacing distances, types and distribution of explosives. delay intervals and sequence, removal of muck piles between each shot, and special handling techniques are required as necessary to produce the specified materials. All aspects of blasting operations shall be specifically designed so that the end product is not damaged from the blasting technique and that the stone is suitable for the intended purpose.

a. Curing Stone

The Contractor shall conduct curing operations on freshly quarried stone to allow it to release stored energy and moisture and to allow the stone to demonstrate that it will not fracture during the energy release and drying-out phase. Such waiver will be granted only if the stone has characteristics that make curing unnecessary.

b. Temporary Storage at Quarry

Storage of stone materials subsequent to shipment from the quarry and prior to permanent placement in the required work shall be subject to approval of the Contracting Officer. Underwater storage of stone materials is prohibited.

2.2.1.3 Gradation Test

The Contractor shall perform a gradation test or tests on the riprap, at the quarry in accordance with paragraph GRADATION TEST METHOD FOR RIPRAP. The sample shall be taken by the Contractor in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer not less than 3 days in advance of each test. In the event of unavailability of the Contracting Office, the Contractor shall perform the tests and certify to the Contracting Officer that the riprap shipped complies with the specifications. At least one gradation test shall be performed per 50,000 tons of each size of riprap, stone, or placed, but not less than one test shall be performed. The gradation tests shall be reported using the forms, GRADATION TEST DATA SHEET and ENG FORM 4794-R, attached at end of this section. The Contractor shall designate on the test form that portion in tons of the lot tested which is applicable to this contract. Any deviation from the reported tonnage shall be corrected and recorded on a revised GRADATION TEST DATA SHEET. The sample shall consist of not less than 50 tonsof riprap, and shall be collected in a random manner which will provide a sample which accurately reflects the actual gradation arriving at the jobsite. Failure of the test on the initial sample and on an additional sample will be considered cause for rejection of the quarry and/or quarry process, and all riprap represented by the failed tests shall be set aside and not incorporated into the work.

Any additional tests required because of the failure of an initial test sample will not be considered as one of the other required tests. If collected by the truckload, each truckload shall be representative of the gradation requirements. The Contracting Officer may direct additional testing of the riprap at the project site if the riprap appears, by visual inspection, to be out of gradation. The additional tests shall be performed on in-place materials at the locations directed, or on random loads selected by the Contracting Officer. In-place test areas shall be not less than 12 feet by 12 feet and shall include the full thickness of

the placed riprap layer, without disturbing or including the underlying material and shall meet the minimum sample size specified above. Each pit excavated for an in-place test sample shall be refilled and reworked to provide a surface void of signs of disturbance. One in-place gradation shall be performed on each 7,500 tons or portion thereof placed. If the gradation test fails, additional gradation tests will be required at the Contractor's expense to delineate the limits of unacceptable stone. The additional gradation tests shall not count as part of the minimum number of gradation tests required. The unacceptable stone shall either be reworked to bring the stone within the specified gradation or the stone shall be removed from the project site as determined by the Contracting Officer. The Contracting Officer may direct this testing under the Contract Clause INSPECTION OF CONSTRUCTION. The Contractor shall provide all necessary screens, scales and other equipment, and operating personnel, and shall grade the sample. Certification and test results shall represent riprap shipped from the quarry. Certification and tests results must be received by the Contracting Officer at the jobsite before the riprap is used in the work.

2.2.1.4 Proportional Dimension Limitations

The maximum aspect ratio (greatest dimension:least dimension) of any piece of stone for size ranges which are not graded with a screen or grizzly, shall be not greater than 3:1 when measured across mutually perpendicular axis. Not more than 25 percent (25%) of the stones within a gradation range shall have an aspect ratio greater than 2.5:1. A maximum of 15 percent flat and elongated pieces by weight will be acceptable. A flat and elongated piece of riprap is defined as having a ratio of width to thickness or length to width greater than 3:1. ASTM D 4791 shall be used as a guide to perform the test.

2.4.1.5 Riprap Stockpile

Storage of riprap at the worksite is not to be confused with off-site stockpiling of riprap. If the Contractor elects to provide off-site stockpiling areas, the Contracting Officer shall be notified by the Contractor of all such areas. The Contractor's stockpile shall be a maximum of 12 feet high and formed by a series of layers of truckload dumps, where the rock essentially remains where it is placed. Subsequent layers shall be started 10 feet from the edge of the previous layer so that the rock will not roll down the edges of the previous layers. The first layer shall be a maximum of 6 feet high. After being stockpiled, any riprap which has become contaminated with soil or refuse shall not be put into the work unless the contaminating material has been removed from the riprap prior to placement.

a. Worksite Stockpile. Riprap delivered to the work sites, which requires temporary storage[landward of top of slope, shall be placed in a container suitable for storing the riprap without waste, or a sand-clay-gravel or crushed stone pad may be constructed for the storage area and removed upon completion of the work. If the sand-clay-gravel or crushed stone pad method is used, the pad shall have a minimum thickness of at least 6 inches. The container or sand-clay-gravel or crushed stone pad method shall be subject to approval prior to delivery of the riprap. Upon completion of the work, the storage areas shall be cleaned of all storage residues and returned to their natural condition. Temporary storage of riprap at the worksite will be allowed, provided the stockpile toe of the riprap be no closer than100

linear feet from the closest edge of the reservoir or top of slope, and the amount shall not exceed 200 T unless otherwise approved.

b. Off-site Stockpile. In areas where riprap is stockpiled for placement, the area shall have excess rock removed prior to completion of work. All rock and spalls greater than 3 inches in diameter shall be removed. Where rocks may have become buried due to soft ground or operation of the equipment, the rock shall be [disposed of as directed] [put in a disposal area]. After the rock has been removed, the storage area shall be graded, dressed, and filled to return the ground surface as near as practical to the condition that existed prior to construction.

2.4.2 Riprap

Only quarried stone shall be used. Riprap quality shall be as specified in paragraph GOVERNMENT TESTING AND STUDIES, subparagraph STONE. Stone shall be well graded and shall conform to the table below.

% LESS THAN BY WEIGHT	WEIGHT (LB)
0 (min.)	25.78
15	82.50
50	206.26
85	404.27
100 (max.)	825.03

PART 3 EXECUTION

3.1 DEMONSTRATION SECTION

Prior to placement of stone, the Contractor shall construct a section of stone protection consisting of riprap to demonstrate his proposed operations for production placement. The section shall demonstrate procedures and capability of grading, placing toe stone and bank protection within the tolerances specified. The demonstration section shall be 50 feet in length and shall conform to all applicable specifications.

3.1.1 Methods and Equipment

Methods and equipment employed for placement shall demonstrate the adequacy for use in placement of riprap and shall conform with the requirements specified. The quantities of all materials placed within the section shall be accurately tabulated and provided immediately to the Contracting Officer for comparison with computed quantities.

3.1.2 Demonstration Section Evaluation

The Contractor shall not proceed with placing stone protection prior to the approval of the demonstration section. Within a period of 7 days after completion of the section, the Contracting Officer shall determine the adequacy of the section to function as part of the permanent construction. The Contractor shall be notified as to the acceptability of the section and may be directed to modify methods of construction[, mix design,] and remove the section if necessary.

3.1.3 Removal of Demonstration Section

If removal of the demonstration section is required, it shall be conducted in such a manner as to maintain the integrity of the underlying subgrade. The Contractor shall make his own arrangements for disposal in areas not located on the site.

3.2 BASE PREPARATION

Areas on which bedding material and riprap are to be placed shall be graded and/or dressed to conform to cross sections shown on the contract drawings within an allowable tolerance of plus 2 inches and minus 2 inches from the theoretical slope lines and grades. The prepared base shall be approved by the Contracting Officer. Where such areas are below the allowable minus tolerance limit they shall be brought to grade by fill with earth similar to the adjacent material and then compacted to a density equal to the adjacent in place material. No payment will be made for any material thus required. Immediately prior to placing the geotextile, the prepared base will be inspected by the Contracting Officer and no material shall be placed thereon until that area has been approved.

3.3 PLACEMENT OF BEDDING LAYERS

3.3.1 General

A bedding layer, consisting of a 3-inch layer of gravel, shall be placed on the prepared base as described below, in accordance with the details shown on the contract drawings, and within the limits shown on the contract drawings or staked in the field.

A tolerance of plus 2 inches and minus 1 inch from the slope lines and grades shown on the contract drawings will be allowed in the finished surface of the bedding, except that the extreme of this tolerance shall not be continuous over an area greater than 200 square feet.

3.3.2 Placement of Bedding Material on Prepared Base

Bedding material shall be spread uniformly on the prepared base to the slope lines and grades as indicated on the contract drawings and in such manner as to avoid damage to the prepared base. Placing of gravel by methods which tend to segregate the particle sizes within the bedding layer or cause mixing of the separate layers will not be permitted. Placement shall begin at the bottom of the area to be covered and continue up slope. Subsequent loads of material shall be placed against previously placed material in such a manner as to ensure a relatively homogenous mass. Any damage to the surface of the prepared base during placing of the material shall be repaired before proceeding with the work. Compaction of material placed on the prepared base will not be required, but the material surface shall be finished to present an adequately even surface, free from mounds or windrows.

3.4 PLACEMENT OF FILTER LAYERS

3.4.1 Geotextile

Installation of geotextile shall be as specified in Section 02378 GEOTEXTILES USED AS FILTERS.

3.4.2 Placement of Filter Material on Prepared Base

Filter material shall be spread uniformly on the prepared base to the lines and grades as indicated on the contract drawings and in such manner as to avoid damage to the prepared base. Placement shall begin at the bottom of the area to be covered and continue up slope. Subsequent loads of material shall be placed against previously placed material in such a manner as to ensure a relatively homogenous mass. Placing of gravel by methods which tend to segregate the particle sizes within the filter layers or cause mixing of the separate layers will not be permitted. Any damage to the surface of the prepared base during placement of the material shall be repaired before proceeding with the work. Compaction of material placed on the prepared base will not be required, but each layer shall be finished to present an adequately even surface, free from mounds or windrows.

3.5 PLACEMENT OF RIPRAP

3.5.1 General

Riprap shall be placed on the bedding layers specified in paragraph(s) BEDDING MATERIAL within the limits shown on the contract drawings.

3.5.2 Placement

3.5.2.1 Above Water

Riprap shall be placed in a manner which will produce a well-graded mass of rock with the minimum practicable percentage of voids, and shall be constructed, within the specified tolerances, to the lines and grades shown on the contract drawings or staked in the field. A tolerance of plus 6 inches and minus 0 inch from the slope lines and grades shown on the contract drawings will be allowed in the finished surface of the riprap, except that the extreme of this tolerance shall not be continuous over an area greater than 200 square feet. The average tolerance of the entire job shall have no more than 50 percent of the tolerances specified above. Riprap shall be placed by means of truck, crane operated skip-pan (box), dragline bucket, clamshell, rock-bucket, hydraulic excavator ("Gradall"), trackhoe, or other approved equipment. The use of tractor loaders or other equipment commonly referred to as front end loaders shall not be permitted. Pneumatic tired front end loaders may be used provided that in the opinion of the Contracting Officer no degradation of the rock occurs. Riprap shall be placed to its full course thickness in one operation and in such manner as to avoid displacing the bedding material. The large stones shall be well distributed and the entire mass of stones in their final position shall be graded to conform to the gradation specified in paragraph RIPRAP, subparagraph GENERAL. Placement shall begin at the bottom of the area to be covered and continue up slope. Subsequent loads of material shall be placed against previously placed material in such a manner as to ensure a relatively homogenous mass. The finished riprap shall be free from objectionable pockets of small stones and clusters of larger stones. Placing riprap in layers will not be permitted. Placing riprap by dumping it into chutes, or by similar methods likely to cause segregation of the various sizes, shall not be permitted. Placing riprap by dumping it at the top of the slope and pushing it down the slope shall not be permitted. No equipment shall be operated directly on the completed stone protection system. The desired distribution of the various sizes of stones throughout the mass shall be obtained by selective loading of the material at the quarry or other source; by controlled dumping of successive loads during final placing; or by other methods of placement which will produce the specified results. Each truckload shall be representative of the gradation requirements. All dump trucks used in placing the riprap shall be equipped with bottom hinged tailgates. The gate releasing mechanism shall be arranged so that it may be operated only from, at, or near the front of the truck. Rearranging of individual stones shall be required to the extent necessary to obtain a well-graded distribution of stone sizes as specified above. However, manipulating stone by means of dozers or other blade equipment shall not be permitted. Unless otherwise authorized by the Contracting Officer, riprap shall be placed in conjunction with the construction of the embankment and with only sufficient lag in construction of the stone protection as may be necessary to prevent mixing of embankment and stone protection materials.] The Contractor shall maintain the stone protection until accepted by the Contracting Officer and any material displaced prior to acceptance and due to the Contractor's negligence shall be replaced at his expense and to the lines and grades shown on the contract drawings.

3.6 PLACEMENT OF SHORELINE PROTECTION

3.6.1 Core/Mattress/Bedding Stone

Stone shall be placed to the lines, grades and thickness shown. The method used in placement shall be such that any soft and organic materials on the lake floor will be displaced outward towards the extreme outside toes of the required sections of the structure and in the direction of the construction. Stone placement shall start at the centerline of the stone structure and extend outward to the toes of the structure in a fashion whereby the line of stone advancement takes an inverted "U" shape. Placement shall be with reasonably systematic care that segregation of particle sizes will not occur. If the materials are placed by clam shell, dragline, or other similar equipment, the stone shall not be dropped from a height exceeding two feetabove the existing lake bottom or previously placed material. Placement with bottom dump scows will not be allowed. The finished surface of the stone shall be adequately smooth and shall be free of mounds or windrows. The finished work shall be free of clusters or small stones and cluster of larger stones.

3.7 TESTS AND INSPECTIONS

3.7.1 Placement Control

3.7.1.1 Check Surveys

Surveys made by the Contractor are required on each material placed for determining that the materials are acceptably placed in the work. The Contractor shall make checks as the work progresses to verify lines, grades and thicknesses established for completed work. At least one (1) check survey as specified below shall be made by the Contractor for each twenty-five (25) foot section as shown as practicable after completion. Following placement of each type of material, the cross section of each step of the work shall be approved by the Contracting Officer before proceeding with the next step of the work. Approval of cross sections based upon check surveys shall not constitute final acceptance of the work. Cross sections shall be taken by the Contractor on lines 25 feet apart, measured along the structure reference line, with readings at 5-foot intervals and at beaks along the lines. However, other cross section spacing and reading intervals may be used if determined appropriate by the Contracting Officer. Additional elevations and soundings shall be taken as the Contracting Officer may deem necessary or advisable. The surveys shall be conducted in the presence of an authorized representative of the Contracting Officer, unless this requirement is waived by the Contracting Officer.

a. Above Water: The elevation of stone above the water surface shall be determined by the use of a leveling instrument and a rod having a base 12 inches in diameter. If approved by the Contracting Officer other means may also be used.

b. Gage Board: The gage shall be checked prior to any survey. The Contractor shall install a gage board at the project site.

3.7.2 Bedding Layers, Filter Layers, and Sand Fill

3.7.2.1 General

The Contractor shall perform gradation tests to assure compliance with

contract requirements and shall maintain detailed records. The bedding material, filter materials and/or sand fill shall be sampled in accordance with ASTM D 75 and tested in accordance with ASTM C 136. The Contractor shall perform the tests before and after surveys of each layer of stone protection material placed.

3.7.2.2 Reporting

Reporting shall be in accordance with paragraph GRADATION TEST.

3.7.3 Gradation Tests for Stone

3.7.3.1 Gradation Test Method for Riprap

Gradation tests shall be performed in accordance with ASTM D 5519, Test Method A.

3.7.3.3 Standard Test Method for Gradation of Riprap and Graded Stone

a. Select a representative sample (Note No. 1), weigh and dump on hard stand.

b. Select specific sizes (see example) on which to run "individual weight larger than" test. (See Note No. 2). Procedure is similar to the standard aggregate gradation test for "individual weight retained".

c. Determine the largest size stone in the sample. (100 percent size)

d. Separate by "size larger than" the selected weights, starting with the larger sizes. Use reference stones, with identified weights, for visual comparison in separating the obviously "larger than" stones. Stones that appear close to the specific weight must be individually weighed to determine size grouping. Weigh each size group, either individually or cumulatively.

e. Paragraph d above will result in "individual weight retained" figures. Calculate individual percent retained (heavier than), cumulative percent retained, and cumulative percent passing (lighter than). Plot percent passing, along with the specification curve on ENG Form 4794-R.

NOTE NO. 1: Sample Selection: The most important part of the test and the least precise is the selection of a representative sample. No "standard" can be devised; larger quarry run stone is best sampled at the shot or stockpile by given direction to the loader; small graded stone is best sampled by random selection from the transporting vehicles. If possible, all parties should take part in the sample selection and agree before the sample is run that the sample is representative.

NOTE NO. 2: Selection of Size for Separation: It is quite possible and accurate to run a gradation using any convenient sizes for the separation, without reference to the specifications. After the test is plotted on a curve, then the gradation limits may be plotted. Overlapping gradations with this method are no problem. However, it is usually more convenient to select points from the gradation limits, such as the minimum 50 percent

size, the minimum 15 percent size, and one or two others, as separation points.For these types of stone gradations the separation points need to be selected as the smallest size stone at each break in the gradation specified.

F O R

E X A M P L E

O N L Y

EXAMPLE GRADATION SPECIFICATIONS

PERCENT LIGHTER BY WEIGHT	STONE WEIGHT IN LBS.
100	400 - 160
50	160 - 80
15	80 - 30

EXAMPLE WORKSHEET

STONE SIZE LBS.	INDIVIDUAL WT. RETAINED	INDIVIDUAL PERCENT RETAINED	CUMULATIVE PERCENT RETAINED	PERCENT PASSING
400	0	0	0	100
160	9,600	30	30	70
80	11,200	35	65	35
30	8,000	25	90	10
<30	3,200	10	100	-
TOTAL	32,000 pounds			

NOTE: Largest stone 251 pounds

G R A D A T I O N T E S T D A T A S H E E T

Quarry _____ Type of Stone Tested _____

Date of Test _____ Testing Rate _____

T E S T R E P R E S E N T S

Contract No.	District	Tons
	TOTAL	

G R A D A T I O N

Stone Size (lbs)	Weight Retained	Individual % Retained	Cumulative % Ret.	Cumulative % Pass	Specification % Finer by wt
Total Weight					

Max Size Stone =	

Remarks:

_____

I certify that the above stone sample is representative of the total tonnage covered by this test report.

Contractor Representative _____

Government Representative _____]

STONE SOURCES

LATITUDE/ LONGITUDE	QUARRY LOCATION, ADDRESS, & TELEPHONE NUMBER	MAIN OFFICE ADDRESS & TELEPHONE NUMBER
	[STATE]	
[_____]	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
[_____]	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
	[STATE]	
[_____]	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
[_____]	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]
	[_____]	[_____]

-- End of Section --

SECTION 02921A

SEEDING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a; R 2001) Agricultural Liming Materials
ASTM D 4427	(1992; R 2002e1) Peat Samples by Laboratory Testing
ASTM D 4972	(2001) pH of Soils

U.S. DEPARTMENT OF AGRICULTURE (USDA)

AMS Seed Act	(1940; R 1988; R 1998) Federal Seed Act
DOA SSIR 42	(1996) Soil Survey Investigation Report No. 42, Soil Survey Laboratory Methods Manual, Version 3.0

1.2 SCOPE OF WORK

Work under this section shall consist of furnishing, delivering and installing all material, labor, equipment, tools and incidentals necessary to complete the work specified herein. Seeding establishment shall be completed in all areas of the work as indicated on the plans and specifications, and at the direction of the Contracting Officer.

The Contractor shall make necessary arrangements to ensure an adequate supply of freshwater to meet the needs of this Contract. The Contractor shall furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of all seeding areas as required to complete the work specified under this section. No extra payment will be made from water coming from the Contractor's own source.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Delivery Schedule; G, RO

Submit a delivery schedule at least 10 days prior to the intended date of the first delivery.

Seed; G, RO
Delivered Topsoil; G, RO
pH Adjusters; G, RO
Fertilizer; G, RO
Mulch; G, RO
Organic Material; G, RO
Soil Conditioner; G, RO

Submit product information for delivered materials 30 days prior to starting work. Data sheets shall show that materials meet the requirements specified herein. Data sheets shall include the following:

a. Seed: Classification, botanical name, common name, percent live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested, for each of the seed mixes.

b. Topsoil: Particle size and textural class.

c. Fertilizer: Chemical analysis and composition percent.

d. pH adjusters: Calcium carbonate equivalent and sieve analysis.

e. Organic material: Composition and source.

f. Soil Conditioner: Composition and source.

g. Mulch: Composition and sources.

Equipment; G, RO

Submit a list of equipment to be used for the planting operation 3 days prior to starting work.

Finished Grade; G, RO

At least 24 hours prior to the commencement of the planting operation, the Contractor shall submit verification that finished grades are as indicated on the plans. The Contracting Officer shall approve this submittal prior to commencement of planting operations.

Quantity Check;

Submit bag count and/or bulk weight measurements of material used compared with area covered to verify the application rate and quantity installed.

Soil Amendments Testing; G, RO

For bulk deliveries, submit a chemical analysis test at least 10 calendar days prior to scheduled soil amendment delivery.

SD-04 Samples

Delivered Upland Topsoil; G, RO

Submit samples taken from several locations at the source at least 15 calendar days prior to scheduled soil amendment delivery.

Soil Amendments; G, RO

Submit 10 pound samples of any soil amendments to be used at least 15 calendar days prior to scheduled soil amendment delivery.

Mulch; G, RO

Submit 10 pound samples of any soil amendments to be used at least 15 calendar days prior to scheduled soil amendment delivery.

SD-06 Test Reports

Equipment Calibration; G, RO

Within 1 week of testing, submit a certification of calibration tests conducted on the equipment used during the seeding operations.

Germination and Purity Test for Seed; G, RO

Submit germination and purity test for the seed mixes 3 months prior to the start of seeding operations.

Soils Test; G, RO

Submit certified reports of laboratory tests, prepared by an independent soil-testing laboratory, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

Soil Amendments Testing; G, RO

For bulk deliveries, submit a chemical analysis test at least 10 calendar days prior to scheduled soil amendment delivery.

SD-07 Certificates

One-year Plant Guarantee - Seeding; G, RO

Submit a signed one-year plant guarantee at least 30 calendar days prior to commencement of planting operations.

Testing Laboratory Qualifications; G, RO

Submit qualifications of the commercial testing laboratory or Contractor's testing facilities when test reports are submitted.

1.4 DELIVERY, INSPECTION, STORAGE, HANDLING AND TIME LIMITATIONS

1.4.1 Delivery

A Delivery Schedule shall be submitted to the Contracting Officer specifying the dates and approximate times of all deliveries of seeding materials.

1.4.1.1 Seed

Seed shall be delivered to the Project Site in the original, unopened bags showing the net weight, composition of mix, suppliers name, and guarantee of analysis. Damaged or faulty packages shall not be used and will be rejected. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened container, bearing the manufacturer's name, chemical analysis, weight of the bag and indication of conformance to state and federal laws. In lieu of containers, soil amendments may be furnished in bulk.

1.4.2 Inspection

Seed shall be inspected upon arrival at the Project site for conformity to species, quality and quantity in accordance with the specifications. Seed that is wet, moldy, or bears a test date exceeding one year, shall be rejected. Other materials shall be inspected for compliance with specified requirements. The following shall be rejected: open soil amendment containers or wet soil amendments; Upland Topsoil that contains slag; cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1 ½ inch diameter; and Upland Topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the Project Site by the Contractor.

1.4.3 Storage

Materials shall be stored in designated areas or as directed by the Contracting Officer. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Seed shall be stored in original unopened packages and not be opened until needed for use.

1.4.4 Handling

Except for bulk deliveries, do not drop or dump materials from vehicles.

1.5 ONE-YEAR PLANT GUARANTEE - SEEDING

The Contractor shall submit to the Contracting Officer, a written and signed one-year plant guarantee - seeding, which is conditional of: 1) at least 85 percent of the seeding areas covered by vegetation and 2) at least 80 percent of the species of established vegetation are the plant species specified herein for the seed mix. Seeding areas or portions thereof for which 85 percent survival/80 percent establishment is not reached shall be reseeded once during the subsequent seeding season, to achieve the 85 percent survival/80 percent establishment described above.

Under the terms and conditions of the one-year plant guarantee - seeding,

the Contractor shall be solely responsible for plant survival in seeded areas. Losses attributed to herbivores, disease, eutrophication, inappropriate hydrological regimes, drought, insect damage, fire, wind or wave energies, ice scouring or vandalism shall not lower the minimum survival or coverage requirements.

At the end of the one-year plant guarantee - seeding, the Contracting Officer shall make a determination as to whether the seeded vegetation meets the conditions of the guarantee. Any seeding areas or portions thereof not meeting the requirements of the guarantee shall be reseeded in accordance with the paragraph "RE-SEEDING".

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

Seed shall be clean and fresh, and harvested from the previous growing season and be state-certified. Seed shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS Seed Act and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

2.1.2.1 Seed Mix

Seed Mix shall meet the following requirements:

Botanical Name (Common Name)	Separate Seeding Rate
Grasses	
Andropogon gerardii (big bluestem)	5 lbs/acre
Festuca arundinacea (tall fescue)	15 lbs/acre
Festuca rubra (creeping red fescue)	10 lbs/acre
Lathyrus sylvestris (flatpea)	10 lbs/acre
Lespedeza capitata (round headed bush clover)	1 lb/acre
Lolium multiflorum (annual ryegrass)	20 lbs/acre
Lotus corniculatus (birdsfoot trefoil)	8 lbs/acre
Solidago juncea (early goldenrod)	1 lb/acre

2.1.3 Quality

Seed shall be free of noxious weeds, undesirable grasses, millet or any other large-seed producing grass. Wet, moldy, otherwise damaged seed shall be rejected.

2.1.4 Seed Mixing

Seed shall be mixed by the seed supplier prior to delivery to the Project Site.

2.1.5 Substitutions

Acceptance of this Contract carries with it the assumption that the Contractor is able to supply all plant materials indicated in the Plant List, on the Drawings and as specified. Substitutions shall not be permitted except at the specific request of the Contracting Officer, or when proof is submitted that a particular plant material is not obtainable after all sources to supply have been investigated. If the Contractor is not able to supply specific plant materials or sizes according to these specifications, a proposal shall be considered for use of nearest equivalent size or variety, with an equitable adjustment of Contract Price. Substitutions shall be approved in writing by the Contracting Officer. When sources for plant materials are located by the Contracting Officer, there shall be no substitutions, and those sources shall be used.

2.2 TOPSOIL

Topsoil shall be as defined in ASTM D 5268. Topsoil shall consist of natural, friable soil and is reasonably free from underlying subsoil, clay lumps, objectionable weeds, viable plants and plant parts, slag, cinders, stones, lumps of soil, sticks, roots, brush, trash or other material over a minimum 1 ½ inch diameter. Topsoil shall be free from toxic substances or any material that might be harmful to plant growth or be a hindrance to grading, seeding, planting or maintenance operations.

2.3 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, and organic material meeting the following requirements. Vermiculite shall not be used.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

2.3.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 10

percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

2.3.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 35 percent shall pass through a No. 6 sieve

2.3.2 Fertilizer

The nutrients ratio for fertilizer shall be 0 percent nitrogen, 10 percent phosphorus and 20 percent potassium. Nitrogen fertilizer shall not be used. Fertilizer shall be controlled release commercial grade, free flowing and uniform composition, conforming to CID A-A-1909. Granular Fertilizer: The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea. Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.2.1 Superphosphate

Superphosphate shall contain 20 percent by weight of available phosphoric acid. The Contracting Officer reserves the right to make tests on the material at any time and acceptance or rejection shall be based upon results of these tests.

2.3.3 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost or worm castings.

2.3.3.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

2.3.3.2 Rotted Manure

Rotted manure shall be unbleached horse, chicken or cattle manure containing a maximum 25 percent by volume of straw, sawdust or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat-treated to kill weed seeds and be free of stones, sticks and soil.

2.3.3.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings or other wood waste materials that are free of stones, sticks, soil, and toxic substances harmful to plants, and are fully composted or stabilized with nitrogen.

2.3.3.4 Recycled Compost

Compost shall be from a well-decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it

was derived. The material shall not contain substances toxic to plants.

The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 2 inches in length.

2.3.3.5 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

2.3.4 Soil Conditioner

Soil conditioner shall be sand or gypsum.

2.3.4.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Greensand shall be balanced with the inclusion of trace minerals and nutrients.

2.3.4.2 Gypsum

Gypsum shall be commercially packaged, free flowing and a minimum 95 percent calcium sulfate by volume.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Mulch for Permanent Seeding

2.4.1.1 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis shall be between 9 and 15 percent moisture. pH shall range from 4.5 to 6.0.

2.4.1.2 Paper Fiber

Paper fiber mulch shall be recycled newsprint that is shredded for the purpose of mulching seed.

2.4.2 Temporary Mulch

Temporary mulch materials shall be straw. Straw shall be stalks from oats, wheat, rye, barely or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.4.2.1 Temporary Mulch Binder

Temporary mulch binder shall be a cellulose or non-asphaltic emulsion, natural gum binder blended with gelling or hardening agents.

2.5 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. If freshwater is not available from local sources, the Contractor is responsible for supplying water from their own sources. Water shall be free of oil, acid, alkalis, salts and other substances toxic to plant life.

PART 3 EXECUTION

3.1 SEEDING PERIODS, CONDITIONS, AND EQUIPMENT

3.1.1 Seeding Periods

Seed shall be installed between April 1 and June 1 for spring establishment; and from September 1 to October 15 for fall establishment.

3.1.2 Timing

Soil amendments shall be added and tilling shall be completed prior to seeding. For the upland slope areas, seeding operations shall be completed following the planting operations.

3.1.3 Climate Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution. If drought, excessive moisture or other unsatisfactory conditions prevail, the work shall be stopped as directed by the Contracting Officer

3.1.4 Finished Grade and Upland Topsoil

Prior to commencement of seeding operations, the Contractor shall verify that finished grades are as indicated on the plans, and the placing of Upland Topsoil, smooth grading and compaction requirements, where applicable have been completed in accordance with Section 02300 EARTHWORK. After grading is complete, heavy equipment is prohibited from entering seeding areas.

3.1.5 Equipment Calibration

Immediately prior to the commencement of seeding operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation.

3.2 SOIL TEST

The Contractor shall test no less than 5 samples of delivered delivered topsoil, in-situ soils (unless otherwise specified) and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts and analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local

growing conditions for the vegetation specified.

3.3 SITE PREPARATION

3.3.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 12-inch depth or may be incorporated as part of the tillage operation.

3.3.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil to a maximum 12-inch depth or may be incorporated as part of the tillage operation.

3.3.3 Applying Soil Conditioner

The soil conditioner shall be applied as recommended by the soil test and approved by the Contracting Officer. The soil conditioner shall be spread uniformly over the soil a minimum 1-inch depth and thoroughly incorporated by tillage into the soil to a maximum 4-inch depth.

3.3.4 Applying Superphosphate

Superphosphate shall be applied by machine at the rate of 20 pounds per 1000 square feet.

3.3.5 Tillage

Soil on slopes and level areas shall be tilled to a minimum 12-inch depth. Rototillers shall be used where soil conditions and length of slope permit. On slopes between 3 horizontal to 1 vertical and 1 horizontal to 1 vertical, the soil shall be tilled to a minimum 2-inch depth by scarifying with heavy rakes, or other methods approved by the Contracting Officer. On slopes 1-horizontal to 1 vertical and steeper, no tillage is required. Drainage patters shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to Topsoil requirements.

3.4 INSTALLATION

Prior to commencement of seeding, the Contractor shall examine the seeding areas and conditions and notify the Contracting Officer, in writing of conditions detrimental to the proper and timely completion of the work. The Contractor shall not proceed with the seeding until unsatisfactory conditions have been corrected in an acceptable manner, as approved by the Contracting Officer. Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION.

The Contractor shall notify the Contracting Officer of the proposed seeding methods a minimum of 60 days prior to commencing seeding operations. The proposed seeding operations are subject to approval by the Contracting Officer.

Seeding operations shall be kept as close as possible to the contours and not up and down slopes.

Subsequent to completion of seeding, the Contractor shall only enter seeded areas when absolutely necessary for the completion of the Project. There shall be no exceptions.

3.4.1 Hydroseeding

Seed, mulch, and fertilizer, if necessary, shall be applied by hydroseeding. The seeding procedure shall be carried out in a manner that ensures even coverage across the seeding area. Seed shall be added to meet the rates specified under subparagraph Permanent Seed Species and Mixtures, and fertilizer, if necessary. The seed and fertilizer shall be thoroughly mixed with freshwater to produce a homogeneous slurry. Mulch shall then be mixed into the slurry in accordance with the manufacturer's recommendations. The time period for the seed to be held in the slurry shall be a maximum of 24 hours. Slurry shall be uniformly applied under pressure over the entire area in accordance with the manufacturer's instructions and at the direction of the Contracting Officer. Hydroseeded areas shall not be rolled.

3.4.2 Watering Seed

If planting in any seeded area will commence more than 30 days after completion of seeding operations, then watering of these areas shall be started immediately after seed/mulch application. Clean, freshwater shall be applied at a rate sufficient to insure thorough wetting of soil to a depth of 1 inch without run off or puddling. During the germination process, seed is to be kept actively growing and not allowed to dry out.

3.5 TEMPORARY SEEDING AND MULCHING

If any of the project area is ready to be seeded or planted outside of the specified seasons, a quick cover is required to prevent surface erosion or if required by Contracting delays, a temporary seeding or temporary mulching shall be applied as part of the Project's Environmental Protection Plan described in Section EPP. Temporary seeding shall be performed if construction is completed between June 2 and August 15. Temporary mulching shall be performed if construction is completed between October 16 and March 15.

The temporary seed mix shall be applied in accordance with the paragraph INSTALLATION, except that it shall be added to meet the rates specified under subparagraph Temporary Seed Species and Mixtures.

3.6 QUANTITY CHECK

For seeding materials provided in bags, the empty bags shall be retained for recording the amount used. For seeding materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.7 RESTORATION AND CLEAN UP

When seeding has been completed, the Contractor shall restore any areas damaged during seeding operation to their original conditions.

Seeding work areas shall also be cleaned up, including the removal of any

excess materials. The Contractor shall remove damaged, excess, and waste materials from the Project Site and dispose of the materials off Government property.

3.8 PROTECTION OF SEEDED AREAS

Immediately upon completion of the seeding operations in an area, the area shall be protected against traffic or other use by erecting barricades and/or providing signage as directed by the Contracting Officer. The Contractor shall only enter seeded areas when absolutely necessary for the completion of the Project. There shall be no exceptions.

3.9 MAINTENANCE DURING CONSTRUCTION

Maintenance of seeded areas during construction shall include protecting embankments and ditches from surface erosion, maintaining mulch, protecting installed areas from traffic and watering.

Any seeded areas disturbed prior to completion of construction, as determined by the Contracting Officer, shall be repaired or reinstalled in accordance with the paragraphs "PREPARATION" and "SEEDING".

3.10 RE-SEEDING

At the end of the one-year plant guarantee, the Contracting Officer shall make a determination as to whether the vegetation seeded in the seeding areas meet the conditions of the guarantee. For areas designated to be re-seeded, the Contracting Officer shall designate the seed mix to be used.

The new seed mix shall comply with the original Contract quantities as shown on the plans, as solely determined by the Contracting Officer with the original Contract quantities as shown on the plans, as solely determined by the Contracting Officer. Materials and installation shall be in accordance with the materials specifications and with the paragraphs "PREPARATION" and "SEEDING", respectively. Replacement seed shall be guaranteed for an additional 6 months starting from date of reseeding.

All labor, materials, equipment and incidentals necessary to complete any reseeding work associated with the one-year plant guarantee shall be at no additional cost to the Government.

-- End of Section --

SECTION 02930

EXTERIOR PLANTING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)

ANLA Z60.1	(1996) Nursery Stock

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A300	(1995) Tree Care Operations-Trees, Shrubs and other Woody Plan Maintenan
ANSI Z133.1	(2001) Arboricultural Operations - Safety Requirements for Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602	(1995a; R 2001) Agricultural Liming Materials
ASTM D 422	(1963; R 1998) Particle-Size Analysis of Soils
ASTM D 2487	(2000) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 4972	(2001) pH of Soils
ASTM D 5268	(2002) Topsoil Used for Landscaping Purposes

U.S. DEPARTMENT OF AGRICULTURE (USDA)

DOA SSIR 42	(1996) Soil Survey Investigation Report No. 42 Soil Survey Laboratory Methods Manual, Version 3.0

1.2 CONTRACTOR QUALIFICATIONS

The installer shall have successful experience with a minimum of five bank or shoreline excavation or stabilization projects and with a minimum of three bioengineering or biotechnical projects specializing brush layer and live stake installation. The contractor shall demonstrate proficiency in practicing effective erosion and sediment control practice during project

implementation. Project monitoring and evaluation reports, client letters or recommendation which refer to specific projects, or written or verbal commentary by public agency personnel shall comprise proof of installer qualifications. Documentation of experience and proficiency is required.

1.3 SCOPE OF WORK

Work under this section shall consist of furnishing and installing plants and soil amendments (if necessary) in accordance with the plans and specifications, and as directed by the Contracting Officer. This work shall consist of furnishing all seed, brush, shrubs, trees and plants, labor, materials, equipment and performing all work necessary and incidental to the construction of bioengineering features in accordance with the specifications and conforming to the lines, grades and dimensions shown on the drawings.

The Contractor shall make necessary arrangements to ensure and adequate supply of water to meet the needs of this Contract. The Contractor shall furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of all planting areas as required to complete the work specified under this section. No extra payment will be made from water coming from the Contractor's own source.

The Contractor shall keep the premises free from rubbish and all debris at all times and shall arrange his material storage so as not to interfere with the operation of the project. All unused materials, rubbish and debris shall be removed from the site.

1.3.1 Work Season

The soil bioengineering work shall be performed in the dormant season between October 15 and April 15.

1.4 DEFINITIONS

1.4.1 Soil Bioengineering

A method which uses specific live native plant materials as its main structural component, but in combination with engineered structures and materials such as stone toes and hard points. Live plant materials (cut unrooted branches and sprigs) are placed in the ground in such a manner that they serve as erosion and sedimentation controlling devices that are intended to grow and assist in land stabilization and naturalization.

1.4.2 Branches or Live Cut Plant Material

Material that has been cut from native growing material. This live, rootable plant material will be used in living soil bioengineering structures, i.e., brush layers.

1.4.3 Brush Layers

A live construction that places living branches close together in a ditch to form a layer like cover over the ground. The layers are intended to grow and protect the slope from eroding.

1.4.4 Dormant Season

The non-growing season for woody species, when they have set their buds,

and photosynthesis in the leaves has stopped (top growth is no longer occurring).

1.4.5 Harvesting Site

Approved existing, natural, native growing sites that lie within a 40 mile radius of the project site, or approved cultivated sites.

1.4.6 Nursery Stock

Refers to rooted woody plants, which have been purchased from a nursery.

1.4.7 Seeding

Seeding shall consist of furnishing and placing seed, commercial fertilizer, agricultural limestone, and other amendments as necessary, all in accordance with these specifications.

1.4.8 Live Stakes

A stake or a pole fashioned from live woody material.

1.4.9 System Excavation

Earth work that is performed immediately prior to placing the actual live construction into the ground, which is directly associated with the installation of the soil bioengineering systems.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Plant Material Order; G, RO

Within 30 days after Notice to Proceed, the Contractor shall provide a complete listing of proposed planting materials and their genetic origins to the Contracting Officer for review. If determined to be deficient, additional information shall be provided. The Contractor should be aware that more than one vendor may be required to obtain all the necessary plant materials. Within 60 days after approval, the Contractor shall forward draft purchase orders for all specified plant materials. Only after receiving written approval of the genetic origin of the source material, shall the Contractor initial procurement.

Estimated Planting Schedule; G, RO

No later than 45 days prior to the estimated planting date, the Contractor shall submit an estimated planting schedule for approval. This estimated schedule shall include the plant shipping dates from the suppliers, plant delivery dates at the construction site or designated delivery point, planting dates for each of the shipments, plant quantities, and an estimate of the planting crew

size. The use of multiple plant material shipping dates is acceptable.

Arrival of Plant Material

Notice shall be given to the Contracting Officer not less than 72 hours before the plant material is to be on the project site. Inspections of the plant materials, including root systems, may be conducted by the Contracting Officer.

SD-03 Product Data

Brush Layers; G, RO
Live Stakes; G, RO
Upland Vegetation; G, RO
Shrub/Tree Fertilizer; G, RO
Mycorrhizal Fungi Inoculum; G, RO
pH adjusters; G, RO
Organic material; G, RO
Soil Conditioner; G, RO

Submit data sheets and catalog cuts 30 calendar days prior to starting work. The data sheets shall show that materials met the requirements specified herin. Data sheets shall include the following:

a. Plants, live stakes and brush layers. Classification, botanical name, common name, size, root type, quantity by species, and growing location.

b. Shrub/tree fertilizer: Chemical analysis and composition percent.

c. Mycorrhizal fungi inoculum: Plants to be treated.

d. pH adjusters: Calcium carbonate equivalent and sieve analysis.

e. Organic material: Composition and source.

f. Soil Conditioner: Composition and source.

Delivery Schedule; G, RO

Submit a delivery schedule at least 10 calendar days prior to the first day of delivery.

Field Stockpiling Sites; G, RO

A minimum of 60 days prior to initiation of planting operations, the Contractor shall submit to the Contracting Officer for approval, a plan sheet indicating the location of each of the proposed field stockpiling sites (field caches). The number and location of the field stockpiling sites shall be developed in such a manner as to promote an efficient planting operation. If required, additional stockpiling areas shall be established at locations selected by the Contracting Officer at no additional cost to the Government.

Equipment; G, RO

Submit a list of equipment to be used for the planting operation 3 days prior to starting work.

Finished Grade and Topsoil; G, RO

At least 24 hours prior to the commencement of the planting operation, the Contractor shall submit verification that finished grades are as indicated on the plans. The Contracting Officer shall approve this submittal prior to commencement of planting operations.

Soil Amendments Testing; G, RO

For bulk deliveries, submit a chemical analysis test at least 10 calendar days prior to scheduled soil amendment delivery.

SD-04 Samples

Delivered Topsoil; G, RO

Submit samples taken from several locations at the source at least 15 calendar days prior to scheduled soil delivery.
Soil Amendments; G, RO

Submit 10 pound samples of any soil amendments to be used at least 15 calendar days prior to scheduled soil amendment delivery.

SD-06 Test Reports

Equipment Calibration; G, RO

Within 1 week of testing, submit a certification of calibration tests conducted on the equipment used during the seeding operations.

Soils Test; G, RO

Submit certified reports of laboratory tests, prepared by an independent soil tetsing laboratory, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and complaince with recognized test standards shall be described.

SD-07 Certificates

One-year Plant Guarantee; G, RO

Submit a signed one-year plant guarantee at least 30 calendar days prior to commencement of planting operations.

Nursery Certifications; G, RO

Indicate names of plants in accordance with the LHBH, including type, quality and size.

SD-11 Closeout Submittals

As-Planted Plan;G, RO

Submit as-built plan of plant material used, as well as a list of plant material quantities used, within two weeks following completion of planting operations.

1.6 DELIVERY, INSPECTION, STORAGE, HANDLING AND TIME LIMITATIONS

1.6.1 Shipping and Delivery

A Delivery Schedule shall be submitted to the Contracting Officer specifying the dates and approximate times of all deliveries of planting materials.

1.6.1.1 Live Brush

Live brush cuttings shall be bound together securely with twine or hoisting belts at the harvesting site, in groups for easy handling and for protection during transport. Live brush cuttings shall be grouped in such a manner that they stay together when handled with all the growing tips in one direction. Side branches and brushy limbs shall be kept intact at this time and all growing tips shall be placed in the same direction.

1.6.1.2 Dormant Live Brush

Dormant live brush shall be cut from approved harvesting sites during the dormant season or purchased from a source approved by the Contracting Officer. All cuts shall be clean and flat. Cuts shall be made with a flat or blunt angle. Care should be taken to avoid bark stripping. Harvesting sites shall be left neat with all extraneous material placed in piles. Branches shall be flexible, free from disease or excess dead twigs, and MUST BE DORMANT. Brush shall be grouped and labeled according to species and placed on the vehicle in a manner such that no damage occurs to the materials. Cut ends shall be wrapped in damp fabric and all brush shall be covered with a tarp during transportation to the installation site to avoid Desiccation.

All cut plant material shall arrive on the job site within eight (8) hours of cutting.

The contractor shall schedule his cutting and delivery to the planting site so that the materials can be installed within 48 hours after they arrive.

1.6.1.3 Nursery Stock

Plants shall be obtained from commercial sources approved by the Contracting Officer or harvested from locations approved by the Contracting Officer. Plants, particularly their roots, shall be kept in a moist to wet condition and never allowed to dry out. If they are received from commercial sources, they shall be shipped in sealed and plastic-lined wrappings containing peat or similar moisture-holding medium. If they are harvested from the wild, they must be transferred to the project site in a moist to wet condition. If harvested from the wild, donor sites must be free from nuisance plants.

Bareroot trees shall be packed in sealed 3-ply polyethylene bags, or sealed polyethylene bags inside wax-impregnated cardboard boxes. With prior written approval, other shipping materials may be authorized. Unless indicated on the plans, tublings shall be shipped in sealed polyethylene

bags inside supporting boxes. Tublings shall be shipped inside propagation cells.

1.6.1.4 Plant Labels

For the purpose of inspection and plant identification, durable, legible labels stating in weather-resistant ink, the correct plant name and size, as specified in the list of required plants shall be securely attached to all plants, and containers or plant material delivered at the plant site.

1.6.2 Plant Inspection

Plant material shall be well shaped, vigorous and healthy with a healthy, well branched root system, free from disease, harmful insects and insect eggs, sun-scald injury, disfigurement or abrasion. Plant material shall be checked for unauthorized substitution and to establish nursery grown status. Plant material showing desiccation, abrasion, sun-scalded injury, disfigurement, or unauthorized substitution shall be rejected. The plan material shall exhibit typical form of branch to height ratio; and meet the measurements specified. Plant material that measures less than specified or has bee poled, topped off or headed back, shall be rejected. Container grown plant material shall show new fibrous roots and the root mass shall contain its shape when removed from the container. Broken containers shall be rejected. Bare root plant material that is not dormant or is showing roots that were pulled from the ground shall be rejected.

Other planting materials shall be inspected for compliance with the requirements herein. The following shall be rejected: open soil amendment containers or wet soil amendments and topsoil that contains viable plants and plant parts. Unacceptable materials shall be removed from the Project Site by the Contractor.

The Contractor shall be responsible for all certificates of inspection of plant materials that may be required by Federal, State or other authorities to accompany each shipment of plants and on arrival; the certificates (s) shall be filed with the Contracting Officer.

1.6.3 STORAGE

1.6.3.1 Live Brush

Prior to arrival at the job site, all live brush cuttings shall be properly labeled by the Contractor. Labels shall be securely attached to the bundles and/or groups of brush cuttings and shall indicate the date collected.

All live brush shall be installed within 12 hours of collection unless cold storage (34 deg F to 50 deg F) or water storage is provided as discussed below. If storage is necessary, store in a cool location with moist, shaded, conditions. All material collected more than 12 hours prior to installation shall be carefully bound and secured and stored submerged in clean, fresh water for a period of up to 2 weeks. Outdoor temperatures must be less than 50 deg F. and temperature indoors and in storage containers must be between 34 and 50 deg F. If live stakes cannot be installed during the dormant season, cut during the dormant season and hold in cold storage at temperatures between 33 and 39 degrees F for up to 2 months.

1.6.3.2 Nursery Stock

Nursery stock plant material not installed on the day of arrival at the site shall be stored and protected in designated areas. Plant material shall not be stored longer than 7 days. Plants stored on-site for more than 7 days will be rejected and shall be replaced at no cost to the Government. Plant material shall be protected from direct exposure to wind and sun. Bare root material shall be heeled-in. All plant material shall be kept in a moist condition by watering with a fine mist spray until installed.

1.6.4 Handling

1.6.4.1 Cutting Live, Growing Plant Material

Live growing plant material at the harvesting site shall be handled with car to avoid bark stripping and trunk wood splitting. Cuts shall be made eight (8) to ten (10) inches from the ground when cutting from the approved, natural growing, source sites. Cuts shall be made flat or at a blunt angle. This ensures that the source site will regenerate rapidly. The harvesting sites shall be left clean and tidy. Large log material shall be cut into sixteen (16) inch firewood lengths and neatly stacked, as directed by the Contracting Officer.

1.6.4.2 Handling Materials

Do not drop or dump plants from vehicles. Avoid damaging plants being moved from nursery or storage area to planting site. Handle bare root container plants carefully to avoid damaging or breaking the earth ball or root structure. Do not handle plants by the trunk or stem. Puddle bare-root plants after removal from the heeling-in bed to protect rots from drying out. Remove damaged plants from the site. Plant material must be covered with a tarp when transporting from harvest site to storage and /or planting site to prevent desiccation.

1.6.5 Time Limitations

Brush layers, live stakes and shrubs shall be installed from October 15th to April 15th. Planting operations will occur only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to planting operations, proposed alternative times shall be submitted for approval.

Nursery stock not installed on the day of arrival on the job site shall be heeled-in and watered. Nursery stock may be held seven (7) days prior to planting. Water plants as often as necessary to prevent drying. Tarping shall be accomplished to prevent desiccation due to wind.

1.6.6 Delivered Topsoil

Prior to the delivery of any topsoil, its availability shall be verified in paragraph TOPSOIL. A soil test shall be provided for topsoil delivered to the site.

1.6.7 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened container, bearing the manufacturer's chemical analysis. In lieu of

containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.7 PAYMENT AND MEASUREMENT

Payment of the quantities as listed in the Bid Schedule will be paid for at the contract price per unit of measurement, for each of the particular pay items listed in this section, which prices and payment will be full compensation for furnishing and installing, furnishing and maintenance care, and placing all other materials (including all labor, equipment, tools) and incidentals necessary to complete the work described in this section.

1.7.1 Brush Layers

Brush layering treatment-brush layers will be measured by the square yard of exposed surface, furnished, installed, staked, seeded and accepted (including labor, machinery, coir product, maintenance care, preparing and tilling and treating of in-situ soils (or excavation or provision of topsoil), necessary to complete the work in a high quality workmanship like manner.

1.7.2 Live Stakes

This item will be measured by the number of live stakes installed in accordance with the plans and specifications, and to the satisfaction of the Contracting Officer.

1.7.3 Bare root, Containerized, and Tubling Uplands Vegetation

Uplands vegetation - tree and shrub vegetation will be measured by each unit, furnished, installed and accepted (including all labor, machinery, maintenance care, plants, fertilizer, planting soil, additional excavation (in excess of tilling or topsoil depth necessary for seeding) necessary to complete the work in a high quality workmanship like manner).

1.8 ONE-YEAR PLANT GUARANTEE

The Contractor shall submit to the Contractor Officer, a written and signed one-year plant guarantee, which is conditional of 85 percent survival of the planted Contract quantity as detailed on the plans. Planting areas or portions thereof for which 85 percent survival is not reached shall be replanted once during the appropriate of planting season for the planting area, to achieve minimum of 85 percent of the planted Contract quantity.

The one-year plant guarantee period shall commence on the date of the completion of construction, and shall end 365 calendar days later. The Contractor shall provide the commencement and ending dates as part of the Periodic Schedule Updates and Progress Curves submitted under Section PROJECT SCHEDULE. Following are the terms and conditions of the one-year plant guarantee:

a. Plants will meet the requirements of the subparagraph Quality.

b. Planting operations will be carried out as stipulated herein.

c. The bioengineering component will protect against defects including death and unsatisfactory and unhealthy growth, scour and undercutting of

materials by moving water, settling of adjacent soils which substantially alters grading, and dislodgment of staking and tying, except for defects resulting from neglect by the Government, abuse or damage by others.

Under the terms and conditions of the one-year plant guarantee, the Contractor shall be solely responsible for plant survival. Losses attributed to herbivores, disease, eutrophication, inappropriate hydrological regimes, drought, wind, wave energies or ice scouring shall not lower the minimum survival or coverage requirements.

At the end of the one-year plant guarantee, the Contracting Officer shall make a determination as to whether the plant planted in the planting areas meet the conditions of the guarantee. Any planting areas or portions thereof not meeting the requirements of the guarantee shall be replanted in accordance with the paragraph REPLANTING.

PART 2 PRODUCTS

2.1 PLANT

The Contractor shall submit verification that a Plant Material Order has been submitted to the nursery. The order shall follow the Planting Tables as shown on the plans. Should the nursery state that any of the specified plants will be unavailable or unsuitable in terms of size and quality of condition, the Contractor will immediately notify the Contracting Officer and provide a written list of potential substitutions. Upon approval, the Contracting Officer will supply the substitution list to the Contractor, at which time the revised plant order will be placed to the nursery.

2.1.1 Plant Species

Plants shall be first quality, nursery grown stock conforming to ANSI Z60.1. Plants listed on the Planting Tables on the plans shall be planted in the planting areas listed on the tables and shown on the plans. The Contractor shall follow the root, height, caliper, spacing and quantity requirements listed on the tables.

2.1.2 Substitutions

Plant substitutions will not be permitted without written request and approval from the Contracting Officer. Any changes to the planting plan must be submitted at least 3 months prior to the commencement of planting operations.

2.1.3 Regulations and Varieties

Furnish nursery stock in accordance with ANSI Z60.1, except as otherwise specified or indicated. Furnish plants grown under climatic conditions similar to those in the locality of the project. Spray plants budding into leaf or having soft growth with an antidesicant before digging. Plants of the same specified size shall be of uniform size and character of growth. All plants shall comply with all federal and state laws requiring inspection for plant diseases and infestation.

2.1.4 Shape and Condition

2.1.4.1 Live Brush

Live brush for brush layers shall be 3 to 5 feet in length, with a basal

end of .25 to 1 inch in diameter. Each stem shall contain at least two healthy side branches; side branches shall not be trimmed off. All live brush plant materials are subject to inspection and approval by the Contracting Officer.

Dormant live brush shall be cut from approved harvesting sites during the dormant season or purchased from a source approved by the Contracting Officer.

2.1.4.2 Live Stakes

Live stakes shall consist of dormant cuttings of specified shrubs as indicated on the plans. Cuttings shall be 0.5 to 1.5 inches in diameter and 2 to 3 feet in length. Cuttings should be no more than 24 hours old prior to installation.

2.1.4.3 Deciduous Shrubs

Deciduous shrubs shall have the height and number of primary stems recommended by ANSI Z60.1. Acceptable plant material shall be well-shaped, full, bushy, compact, symmetrical plants of uniform color and texture. Side branches shall possess thick, closely massed foliage to the ground.

2.1.4.4 Coniferous Evergreen Plant Material

Coniferous Evergreen plant material shall have the height to spread ratio recommended by ANLA Z60.1. The coniferous evergreen trees shall not be "poled" or the leader removed. Acceptable plant material shall be exceptionally heavy, well-shaped and trimmed to form a symmetrical and tightly knit plant.

2.1.4.5 Bare-Rooted Plant Material

Minimum root spread shall be in accordance with ANLA Z60.1. A well branched root system characteristic of the species specified shall be provided. Roots shall not be pulled from the ground. Bare-root plant material shall be dormant. The root system shall be protected from drying out.

2.1.4.6 Container-Grown Plant Material

Container size shall be in accordance with ANLA Z60.1 Plant material shall be grown in a container over a duration of time for new fibrous roots to have developed and for the root mass to retain its shape and hold together when removed from the container. The container shall be sufficiently rigid to hold root-ball shape and protect root mass during shipping.

2.2 SOIL AMENDMENTS

Soil amendments shall consist of pH adjuster, fertilizer, organic material and soil conditioners meeting the following requirements. Vermiculite shall not be used.

2.2.1 pH Adjusters

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.2.1.1 Limestone

Limestone material shall contain a minimum calcium carbonate equivalent of 80 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 55 percent shall pass through a No. 60 sieve. To raise soil pH, ground limestone shall be used.

2.2.1.2 Hydrated Lime

Hydrated lime shall contain a minimum calcium carbonate equivalent of 110 percent. Gradation: A minimum 100 percent shall pass through a No. 8 sieve and a minimum 97 percent shall pass through a No. 60 sieve.

2.2.1.3 Burnt Lime

Burnt lime shall contain a minimum calcium carbonate equivalent of 140 percent. Gradation: A minimum 95 percent shall pass through a No. 8 sieve and a minimum 35 percent shall pass through a No. 60 sieve.

2.2.2 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

2.2.2.1 Bonemeal

Bonemeal shall be finely ground, steamed bone product containing from 2 to 4 percent nitrogen and 16 to 40 percent phosphoric acid.

2.2.2.2 Rotted Manure

Rotted manure shall be unbleached horse, chicken or cattle manure containing a maximum of 25 percent by volume of straw, sawdust, or other bedding materials. It shall contain no chemicals or ingredients harmful to plants. The manure shall be heat treated to kill weed seeds and be free of stones, sticks, and soil.

2.2.2.3 Decomposed Wood Derivatives

Decomposed wood derivatives shall be ground bark, sawdust, yard trimmings, or other wood waste material that is free of stones, sticks, soil and toxic substances harmful to plants, and is fully composted or stabilized with nitrogen.

2.2.2.4 Recycled Compost

Compost shall be from a well-decomposed, stable, weed free organic matter source. Compost shall be derived from food; agricultural or industrial residuals; biosolids (treated sewage sludge); yard trimmings; or source-separated or mixed solid waste. The compost shall possess no objectionable odors and shall not resemble the raw material from which it was derived. The material shall not contain substances toxic to plants.

The compost material shall pass through a 3/8 inch screen, possess a pH of 5.5 to 8.0, and have a moisture content between 35-55 percent by weight. The material shall not contain more than 1 percent by weight of man-made foreign matter. Compost shall be cleaned of plastic materials larger than 2

inches in length.

2.2.2.5 Worm Castings

Worm castings shall be screened from worms and food source, and shall be commercially packaged.

2.2.3 Soil Conditioner

Soil conditioner shall be sand or gypsum.

2.2.3.1 Sand

Sand shall be clean and free of toxic materials. Gradation: A minimum 95 percent by weight shall pass a No. 10 sieve and a minimum 10 percent by weight shall pass a No. 16 sieve. Greensand shall be balanced with the inclusion of trace minerals and nutrients.

2.2.3.2 Gypsum

Gypsum shall be commercially packaged, free flowing and a minimum 95 percent calcium sulfate by volume.

2.2.3.3 Plant Fertilizer

Shrub/tree fertilizer shall be a slow release tablet with a 20-10-5 nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic coated pills or isobutylenediurea. Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

Fertilizers shall be packed in the manufacturer's standard containers. The name of the material, the net weight of the contents, and the manufacturer's name and guaranteed analysis shall appear on each container. The manufacturer's label of certification indicating compliance with these specifications shall form the basis of acceptance.

2.3 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. If freshwater is not available from local sources, the Contractor is responsible for supplying water from their own sources. Water shall be free of oil, acid, alkalis, salts and other substances toxic to plant life.

2.4 ANTI-DESICCANT

Wilt-Pruf, or Vaporguard, an emulsion which shall provide a protective coating over plant surfaces, shall be applied to reduce moisture losses in transplanting and to preserve new planting. It shall dry to a colorless, harmless, non-staining, slightly glossy film that shall wear away completely in approximately three (3) months. "Wilt-Pruf" shall be delivered to the site in original, unopened containers, bearing the manufacturer's name and guarantee statement of analysis. "Wilt-Pruf" manufactured by Nursery Specialty Products, Incorporated, New York, NY or "Vaporguard" as manufactured by Miller Chemical and Fertilizer Corporation, Hanover, PA, or a product of approved equal quality shall be acceptable.

2.5 MYCORRHIZAL FUNGI INOCULUM

Mycorrhizal fungi inoculum shall be composed of multiple-fungus inoculum as recommended by the manufacturer for the plant material specified.

PART 3 EXECUTION

3.1 DAMAGE TO VEGETATION WITHIN PRESERVED AREAS

Any vegetation within preserved areas damaged by the work under this section, as determined by the Contracting Officer, shall be replaced immediately after the completion of the work at no additional cost to the Government.

3.2 PLANTING CONDITIONS AND EQUIPMENT

3.2.1 Planting Substrates

Planting substrates shall be free from debris, noxious weeds, toxic substances or other materials harmful to plant growth.

3.2.2 Finished Grade

Prior to the commencement of the planting operations, the Contractor shall verify the finished grades are as indicated on the plans, and the finishing and compaction requirements have been completed in accordance with Section 02300 EARTHWORK. After grading is complete, heavy equipment is prohibited from entering planting areas.

3.2.3 Equipment Calibration

Immediately prior to the commencement of planting operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall be calibrated a minimum of once every day during the operation.

3.2.4 Soils Test

Delivered topsoil, in-situ soils (unless otherwise specified) and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts and analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the vegetation specified.

3.3 PREPARATION

3.3.1 Applying pH Adjusters

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 12 inch depth or may be incorporated as part of the tillage operation.

3.3.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil to a maximum 12 inch depth or may be incorporated as part of the tillage operation.

3.3.3 Applying Soil Conditioner

The soil conditioner shall be applied as recommended by the soil test and approved by the Contracting Officer. The soil conditioner shall be spread uniformly over the soil a minimum 1-inch depth and thoroughly incorporated by tillage into the soil to a maximum 4-inch depth.

3.3.4 Applying Super Absorbent Polymers

Polymers shall be spread uniformly over the soil as recommended by the manufacturer and thoroughly incorporated by tillage into the soil to a maximum 12 inch depth. Erosion or grade deficiencies shall conform to Wetland Topsoil requirements.

3.3.5 Tillage

Soil on slopes and level areas shall be tilled to a minimum 12 inch depth. Rototillers shall be used where soil conditions and length of slope permit. On slopes between 3 horizontal to 1 vertical and 1 horizontal to 1 vertical, the soil shall be tilled to a minimum 2 inch depth by scarifying with heavy rakes, or other methods approved by the Contracting Officer. On slopes 1-horizontal to 1 vertical and steeper, no tillage is required. Drainage patters shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to Topsoil requirements.

3.3.6 Time and Site Conditions

3.3.6.1 Brush Layering and Live Stakes

Brush layers and live stakes shall be installed from October 15th to April 15th. Brush layers shall be installed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. When special conditions warrant a variance to the brush layering operations, proposed alternative times shall be submitted for approval.

3.3.6.2 Use of In-Situ Soil for Brush Layers

It is intended that the in-situ soil material, as defined herein and approved by Contracting Officer, be obtained from approved on-site excavation operations, and be used in constructing the brush layer bioengineering systems after fertilizer and lime have been mixed with the material. Additional required suitable fill material shall be obtained from sources selected by the Contractor and approved by the Contracting Officer and meet the requirement specified herein.

The in-situ soil material shall be natural, viable soil capable supporting plant growth. In addition, fertilizer and lime shall be mixed into the material as needed (in accordance with soil tests). The material shall be free of any admixture of subsoil, foreign matter, objects larger than three (3) inches in any dimension, toxic substances, or any material or

substance, which could be harmful to plant growth. Gravel alone shall not be considered as suitable material for use around live cut plant materials. Muddy (over-saturated) soils, which otherwise meet these requirements, shall not be considered suitable material until they have been dried to a workable moisture content. Heavy clays shall be mixed with sandy and/or organic soils to increase porosity. Acceptability of materials used to prepare the select fill shall be determined on-site by the Contracting Officer.

3.4 INSTALLATION

3.4.1 Obstructions Below Ground

When obstructions below finished grades prevent planting operations, the Contractor shall submit a plan showing proposed adjustments to location, type of plant, and/or planting method to the Contracting Officer.

3.4.2 Obstructions Below Ground

When obstructions below finished grades prevent planting operations, the Contractor shall submit a plan showing proposed adjustments to location, type of plant, and/or planting method to the Contracting Officer.

3.4.3 Planting

3.4.3.1 Erosion Control Blanket

The Contractor shall install Coir Fiber Matting as described in Section 02370 SOIL SURFACE AND EROSION CONTROL. Subsequent to matting installation, the Contractor shall ready the matting for planting the live stakes and shrub material using one of the following methods.

a. Holes in the matting shall be created by pulling the matting apart by hand to accomodate the root system.

b. Holes in the matting shall be created by cutting a cross into the matting to accommodate the root system.

Planting holes will be dug in the Topsoil and planting material shall be installed through the matting as detailed in subparagraphs Live Stakes and Tubelings.

3.4.3.2 Installing Brush Layering

Brush layers are constructed above the riprap lined toe of slope as indicated on the drawings. Above the top riprap, a trench shall be excavated into the slope, on contour, sloping downward from the face of the bank 10 to 20 degrees below horizontal as shown on the drawings. Live branches of willow and other species as listed in this specification, shall be placed in the trench with their basal end pointed inward and no less than 6 inches or more than 18 inches of the tips extending beyond the face of the slope. Brush layers shall be from 3 to 7 feet in length at a density of 10 stems per foot of bank. Branches shall have a basal end of .25 to 2 inches in diameter and crisscrossed. Brush layers shall be covered with at least 4 to 6 inches of in-situ soil or topsoil immediately following placement and the material compacted firmly, so as to create good stem to soil contact throughout the brush layer. Other brush layers shall be placed, as needed on contour intermittently upslope as indicated on the drawings. If cohesionless, disturbed or fill soil is encountered in between

brush layers, it will be necessary to cover that soil with coir fabric. The coir covered zone between the brush layers shall be seeded with uplands seed mix and staked as shown in the drawings.

3.4.3.3 Live Stakes

Planting shall be performed during periods only when weather and soil conditions are suitable and in accordance with locally accepted practice, as approved by the Contracting Officer. Deviation from the above planting dates will be permitted only when approved in writing by the Contracting Officer.

Plant materials shall be placed at intervals of 2 ft horizontal by 5 ft vertical as indicated on the drawings and as specified and shall follow other general planting practices considered normal and prudent by nursery tradesmen. Eighty percent of the stake will be installed below ground, leaving only twenty (20) percent of the willow stake extending above ground. Live stakes shall be tamped or otherwise backfilled, to insure continuous soil to cutting contact, with no excessive voids in the surrounding soil materials.

Stakes shall not be split during installation. Those live stakes that are split shall be removed and replaced, or if the split is less than 1/6 of the cutting length, the top may be re-trimmed after installation to remove the damaged portion.

3.4.3.4 Shrubs and Trees

The Contractor shall ready the surface erosion control blanket for planting the shrub and tree material using one of the following methods as mentioned in subparagraph 3.3.3.1 Erosion Control Blanket.

Bare root plants shall be inoculated with mycorrhizal fungi either before shipment at the nursery or in the field. Inoculation shall consist of dipping the root system in gel containing mycorrhizal fungi inoculum as recommended by the manufacturer for the plants specified.

Bare root plants shall be installed in accordance with the planting notes and planting details. Plant so roots are arranged in a natural position.

For cans, remove from container and prevent damage to plant or root system.

Planting pits shall be dug in the Topsoil through the matting approximately 4 inches wider than the stock size. To encourage well-aerated soil to be available to the root system for favorable root growth, plant pits shall be constructed with sides sloping towards the base; vertical sides shall not be used.

Prior to placing a shrub or tree in the planting pit through the surface erosion control blanket, a shrub/tree fertilizer tablet shall be placed in the bottom of each plant pit. At no time shall fertilizer be placed in the water column or on top of the soil surface. Soluble fertilizers should not be placed in direct contact with the rootstocks.

The tops of the rootstock mass of all the shrubs and trees shall be a minimum of 1 inch below the soil surface. Shrubs and trees shall be set plumb, with the root system oriented downward, and held in position until sufficient soil has been firmly placed around the root mass.

Improper planting that results in air pockets, J-roots, shallow planting, exposed roots or leaning plants is unacceptable and shall be corrected at the Contractor's expense.

3.4.4 Watering

The planting areas shall be watered within 8 hours of completion of planting operations until completely saturated. Clean, freshwater shall be applied as often as required to maintain a moist seedbed for optimum germination, and to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1-inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over planted areas. Watering of other adjacent areas or vegetation shall be prevented.

For brush layers, watering shall be started immediately after completing each day of brush layering. Water shall be applied at a rate sufficient to ensure moist soil conditions to a minimum 1 foot depth. Run-off, puddling, and wilting shall be prevented. Unless otherwise directed, watering truckes shall be not be driven over turf areas. Watering of other adjacent areas or plant material shall be prevented.

3.5 AS-PLANTED PLANS

The Contractor shall submit two copies of an As-Planted Plan to the Contracting Officer. Unless directed differently by the Contracting Officer, these plans shall be drawn to a scale of 1 inch = 50 feet and shall show as-built locations for the plant material used. A list of the quantities of each species installed in each of the planting blocks or areas shall also be submitted with the plans. Any deviations from the original planting plans, including approved substitutions, shall be clearly marked and documented.

3.6 MAINTENANCE DURING CONSTRUCTION

Installed plants shall be maintained in a healthy growing condition. Maintenance of planting areas during construction shall include preventing the intrusion of weeds, grass, and other undesired vegetation, watering and adjusting grades for settling. Grass, weeds, and other undesired vegetation shall be removed before reaching a maximum height of 3 inches including the root system. When settling occurs, additional backfill soil shall be added to the plant pit until the backfill level is equal to the surrounding grade. Serious settling that changes the setting of the plant in relation to the maximum depth at which it was grown requires replanting in accordance with paragraph INSTALLATION.

Any planted areas disturbed prior to completion of construction, as determined by the Contracting Officer, shall be repaired or reinstalled in accordance with the paragraph INSTALLATION.

3.7 RESTORATION AND CLEAN UP

When planting operations have been completed, the Contractor shall restore any damaged areas to their original conditions.

Planting work areas shall also be cleaned up, including the removal of any excess materials. The Contractor shall remove damaged, excess, and waste materials from the Project Site and dispose of the materials off Government property.

3.8 PROTECTION OF INSTALLED AREAS

Immediately upon completion of the planting operations in an area, the area shall be protected against traffic or other use by erecting barricades and/or providing signage as directed by the Contracting Officer.

3.9 REPLANTING

At the end of the one-year plant guarantee, the Contracting Officer shall make a determination as to whether the plants planted in the planting areas meet the conditions of the guarantee. For non-surviving plants, the Contracting Officer shall select the species to be replanted. The new plantings shall comply with the original Contract quantities as shown on the plans, as solely determined by the Contracting Officer. Materials and installation shall be in accordance with the materials specifications and the paragraph INSTALLATION, respectively. Replacement plants shall be guaranteed for an additional 6 months starting from date of replanting.

The planting substrates of replanted areas shall be re-tested in accordance with subparagraph Soils Test. If the test results show that all or a portion of the substrate is not within the optimum ranges as specified by the soil testing laboratory, the Contractor shall incorporate additional soil amendments in accordance with subparagraph Application of Soil Amendments. Prior to application, these recommendations shall be approved by the Contracting Officer.

All labor, materials, equipment, and incidentals necessary to complete any replanting work associated with the one-year plant guarantee shall be at no additional cost to the Government.

-- End of Section --